SERVICE 11

model 110 Fm / Am Stereophòmic Tune

ma rantz

TABLE OF CONTENTS

SECTION	PAGE
Introduction	1
AM Tuner	
FM Tuner	
AM Alignment Procedure	3
FM Alignment Procedure	4
Test Equipment Required for Servicing	
Voltage Conversion	5
Parts List	15
Specifications	21
LIST OF ILLUSTRATIONS	
FIGURE	PAGE
	,,,,,_
1. Remove the Terminal Cover	
2. Voltage Conversion Chart	
3. Dial Stringing	
4. Front Panel Adjustment and Component Locations	
5. Main Chassis Component Locations (Top View)	
6. Rear Panel Adjustment and Component Locations	
7. Main Chassis Component Locations (Bottom View)	9
8. FM Front End Assembly P100 Component Locations	10
9. FM IF Amplifier Assembly P200 Component Locations	10
10. FM Detector P500 Component Locations	
11. MPX Stereo Decoding Amplifier P300 Component Locations	
12. Muting Control Amplifier Assembly P550 Component Locations	12
13. AM Tuner Unit Assembly P150 Component Locations	12
14. Mode Selection Switch Unit Assembly P700 Component Locations .	13
15. Pre-Amplifier and Power Supply Assembly P400 Component Locatio	ns 13
16 Schematic Diagram	14

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MODEL IIO SERVICE MANUAL

This Service Manual is the first revised edition for model 110 (Applied to production serial No. from 1001 to 1550).

Included in this service manual are schematic diagram, indivisual parts list and P.C. Board-Component Assembly Diagram.

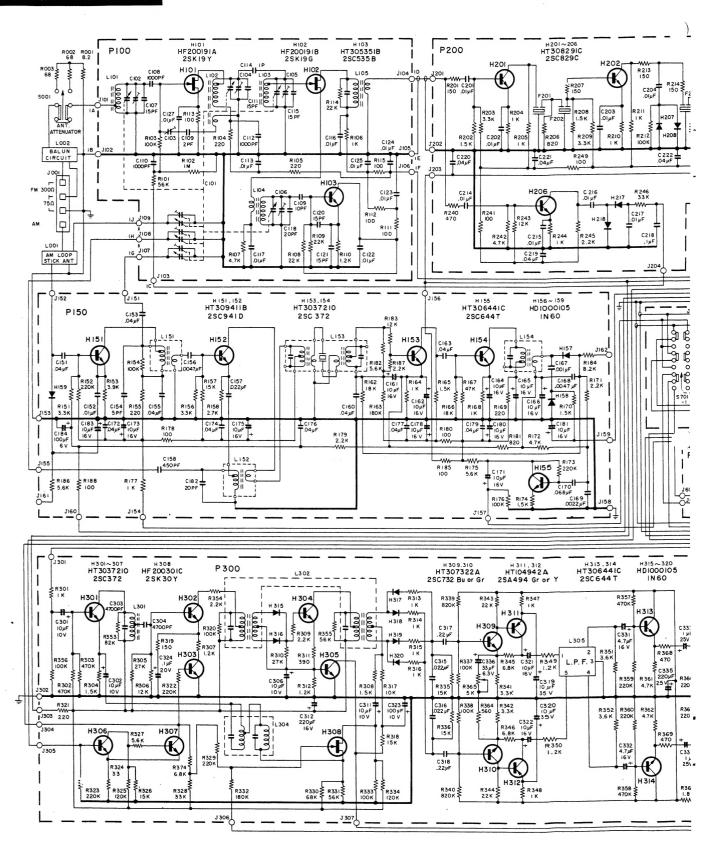
On the circuit description alignment method and repairing hints, refer to the original service manual.

TABLE OF CONTENTS

Parts List	 1
Schematic Diagram	 3
P.C. Board-Component Assembly Diagram	 5

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION	REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
		P. C. Board	C209-C212	DK1710301	Ceramic, 0.01µF, ±20%
P200	YD2819003 (ZZ2819003)		C213	DK1810402	Ceramic, 0.1μ F, +80%, -20°
	(222019003)	1. C. Board Assembly	C214-C217	DK1710301	Ceramic, 0.01μ F, $\pm 20\%$
	·	RESISTORS		DK4040400	Ceramic, 0.1µF, +80%, -20
R201	RT1015114	Carbon, 150Ω , $\pm 10\%$, $1/4W$	C218	DK1810402	
R202	RT1015214	Carbon, $1.5K\Omega$, $\pm 10\%$, $1/4W$	C219-C225	DK1840302	
R203	RT1033214	Carbon, 3.3K Ω , ±10%, 1/4W	C226	DD1540001	Ceramic, 40pF, ±5%
R204-R205	RT1010214	Carbon, $1K\Omega$, $\pm 10\%$, $1/4W$			CEMICONDUICTORS
R206	RT1082114	Carbon, 820Ω , $\pm 10\%$, $1/4W$			SEMICONDUCTORS
R207	RT1015114	Carbon, 150Ω , $\pm 10\%$, $1/4W$	H201-H206	HT308291C	Transistor, 2SC829C
R208	RT1015214	Carbon, $1.5K\Omega$, $\pm 10\%$, $1/4W$	H207-H214	HD2001105	Diode, 1SI555
R209	RT1033214	Carbon, $3.3K\Omega$, $\pm 10\%$, $1/4W$	H215-H228	HD1000105	Diode, 1N60
R210-R211	RT1010214	Carbon, $1K\Omega$, $\pm 10\%$, $1/4W$			
R212	RT1010414	Carbon, $100K\Omega$, $\pm 10\%$, $1/4W$			MISCELLANEOUS
			L201	LC1682002	Choke Coil, 6.8µH±20% 100m/
R213-R214	RT1015114	Carbon, 150 Ω , \pm 10%, 1/4W	F201-F206	FF1107003	Ceramic Filter, SFA 10.7MHz
R215	RT1082114	Carbon, 820 Ω , ±10%, 1/4W	J201-J208	YP1000094	Plug
R216	RT1015114	Carbon, 150Ω , $\pm 10\%$, $1/4W$			
R217	RT1015114	Carbon, $1.5 \text{K}\Omega$, $\pm 10\%$, $1/4 \text{W}$	P500	YD2819005	P. C. Board
R217	RT1033214	Carbon, $3.3K\Omega$, $\pm 10\%$, $1/4W$		(ZZ2819005)	
R219-R220	RT1033214	Carbon, $1K\Omega$, $\pm 10\%$, $1/4W$,,	
R219-R220	RT1010214	Carbon, $100K\Omega$, $\pm 10\%$, $1/4W$			RESISTORS
R221 R222	RT1015114	Carbon, $150\Omega_1$, $\pm 10\%$, $1/4\%$	R501	RT1015114	Carbon, 150Ω , $\pm 10\%$, $1/4$
	RT1015114	Carbon, 19022 , $\pm 10\%$, $1/4W$	R502	RT1010114	Carbon, $1K\Omega$, $\pm 10\%$, $1/4$
R223	1	Carbon, 820 Ω , $\pm 10\%$, 1/4W	R502	RT1010214	Carbon, 100Ω , $\pm 10\%$, $1/4$
R224	RT1082114	Carbon, 82052, $\pm 10\%$, 1/4W Carbon, 150 Ω , $\pm 10\%$, 1/4W	R504	RT1010114	Carbon, 1083 , $\pm 10\%$, $1/4$
R225	RT1015114	Carbon, 19032, ±10/0, 1/499	R505	RT1022314	Carbon, 220Ω , $\pm 10\%$, $1/4$
			R506-R507		Carbon, 820 Ω , ±5%, 1/4
D000	DT4000044	Combon 9.31/O ±100/ 1/4W	1 1	1	Carbon, $6.8K\Omega$, $\pm 5\%$, $1/4$
R226	RT1082214	Carbon, 8.2K Ω , ±10%, 1/4W	R508-R509	RT1010114	Carbon, 0.8132 , -376 , $1/4$
R227	RT1015314	Carbon, $15K\Omega$, $\pm 10\%$, $1/4W$	R510	1	Carbon, 10022 , $\pm 10\%$, $1/4$
R228-R229	RT1010214	Carbon, $1K\Omega$, $\pm 10\%$, $1/4W$	R511	RT1056214	Carbon, 5.6 \times 2, \pm 10%, 1/4 Carbon, 15 \times \times 0, \pm 10%, 1/4
R230	RT1027114	Carbon, 270Ω , $\pm 10\%$, $1/4W$	R512	RT1015314	Carbon, 15132, 21070, 17
R231	RT1010414	Carbon, 100 K Ω , ± 10 %, $1/4$ W	D540	DNI1010414	Carbon, 180K Ω , ±10%, 1/4
R232	RT1082214	Carbon, $8.2K\Omega$, $\pm 10\%$, $1/4W$	R513	RN1018414	Cui boil, io
R233	RT1015314	Carbon, $15K\Omega$, $\pm 10\%$, $1/4W$	R514	RN 1022214	
R234	RT1015114	Carbon, 150Ω , $\pm 10\%$, $1/4W$	R515	RN1010414	
R235-R236		Carbon, $1K\Omega$, $\pm 10\%$, $1/4W$	R516	RT1010114	ourson, re,
R237	RT1015114	Carbon, 150 Ω , ±10%, 1/4W	R517	RT1010114	
			R518	RT1039214	Carbon, 3.9K Ω , ±10%, 1/4
R238	RT1010414	Carbon, 100 K Ω , ± 10 %, $1/4$ W			
R239	RT1015114	Carbon, 150Ω , $\pm 10\%$, $1/4W$			DADAGITO DE
R240	RT1047114	Carbon, 470Ω , $\pm 10\%$, $1/4W$		1	CAPACITORS
R241	RT1010114	Carbon, 100Ω , $\pm 10\%$, $1/4W$	C501-C502		101/
R242	RT1047214	Carbon, 4.7K Ω , ±10%, 1/4W	C503	EA1060169	1000/ V/
R243	RT1012314	Carbon, 12KΩ, ±10%, 1/4W	C504	DK1710301	
R244	RT1010214	Carbon, $1K\Omega$, $\pm 10\%$, $1/4W$	C505	DK1840302	1100/ CI
R245	RT1022214	Carbon, 2.2K Ω , ±10%, 1/4W	C506-C507	DD1620101	
R246	RT1033314	Carbon, $33K\Omega$, $\pm 10\%$, $1/4W$	C508	EA1060169	
R247	RT1056314	Carbon, $56K\Omega$, $\pm 10\%$, $1/4W$	1 1	EA1070061	
	1	1	C510	ED1050501	
R248	RT1027314	Carbon, $27K\Omega$, $\pm 10\%$, $1/4W$	1 1	EA1060169	Elect., 10μF, 16V
R249-R252			1 1	DK1840302	1000/
R253	RT 1022014				
11233	11, 1022014	. 2232, 1070, 1/410	C513	DD1620101	Ceramic, 200pF, ±10%
		CARACITORS	C514	EA1070161	1 101/
C201 C207	DK1740004	CAPACITORS			
C201-C207	1				
C208	DK1710201	Ceramic, 0.001µF, ±20%		<u> </u>	

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
H501 H502 H503-H504	HC1000105 HT306441B HD1000105	SEMICONDUCTORS IC TA7060P Transistor, 2SC644S Diode 1N60
J501-J506 J508-J509 L501	YP1000094 YP1000094 LI1018801	MISCELLANEOUS Plug Plug IFT FM Det.
P550	YD2820006 (ZZ2818006)	P. C. Board P. C. Board Assembly
R551 R552 R553 R554 R555 R556-R557 R559 R560 R561 R562	RT1056214 RT1010114 RT1027314 RT1010414 RT1010214 RT1033314 RT1033214 RT1036214 RT1018414	RESISTORS Carbon, $5.6 \mathrm{K}\Omega$, $\pm 10\%$, $1/4 \mathrm{W}$ Carbon, 100Ω , $\pm 10\%$, $1/4 \mathrm{W}$ Carbon, $27 \mathrm{K}\Omega$, $\pm 10\%$, $1/4 \mathrm{W}$ Carbon, $100 \mathrm{K}\Omega$, $\pm 10\%$, $1/4 \mathrm{W}$ Carbon, $1 \mathrm{K}\Omega$, $\pm 10\%$, $1/4 \mathrm{W}$ Carbon, $33 \mathrm{K}\Omega$, $\pm 10\%$, $1/4 \mathrm{W}$ Carbon, $33 \mathrm{K}\Omega$, $\pm 10\%$, $1/4 \mathrm{W}$ Carbon, $33 \mathrm{K}\Omega$, $\pm 10\%$, $1/4 \mathrm{W}$ Carbon, $3.3 \mathrm{K}\Omega$, $\pm 10\%$, $1/4 \mathrm{W}$ Carbon, $5.6 \mathrm{K}\Omega$, $\pm 10\%$, $1/4 \mathrm{W}$ Carbon, $180 \mathrm{K}\Omega$, $\pm 10\%$, $1/4 \mathrm{W}$
R563-R564 R578	RT1010114 RT1010114	Carbon, 100Ω , $\pm 10\%$, $1/4W$ Carbon, 100Ω , $\pm 10\%$, $1/4W$
C551 C552 C553 C554 C555 C556 C558 C559 C560-C561 C562	DD1615001 DF1668301 DF1740301 EA1060162 DK1840302 DK1810402 DK1810402 EA1060162 DK1710301 DK1840302	CAPACITORS Ceramic, 15pF, $\pm 10\%$, SL Mylar, $0.068\mu\text{F}, \pm 10\%$, Mylar, $0.04\mu\text{F}, \pm 20\%$ Elect., $10\mu\text{F}, 16\text{V}$ Ceramic, $0.04\mu\text{F}, +100\%, -0\%$ Ceramic, $0.1\mu\text{F}, +80\%, -20\%$ Ceramic, $0.1\mu\text{F}, +80\%, -20\%$ Elect., $10\mu\text{F}, 16\text{V}$ Ceramic, $0.01\mu\text{F}, 16\text{V}$ Ceramic, $0.01\mu\text{F}, \pm 20\%$ Ceramic, $0.01\mu\text{F}, \pm 20\%$ Ceramic, $0.04\mu\text{F}, \pm 20\%$
H551 H552-H553 H554-H555		SEMICONDUCTORS Transistor, 2SC733 Gr Transistor, 2SC372 Diode, 1N60
L551 J551-J561	LC2105001 YP1000094	MISCELLENEOUS Choke Coil, 1mH Plug
3331-3301	11 1000034	



Applied to production Serial No. from 1001 to 1550.

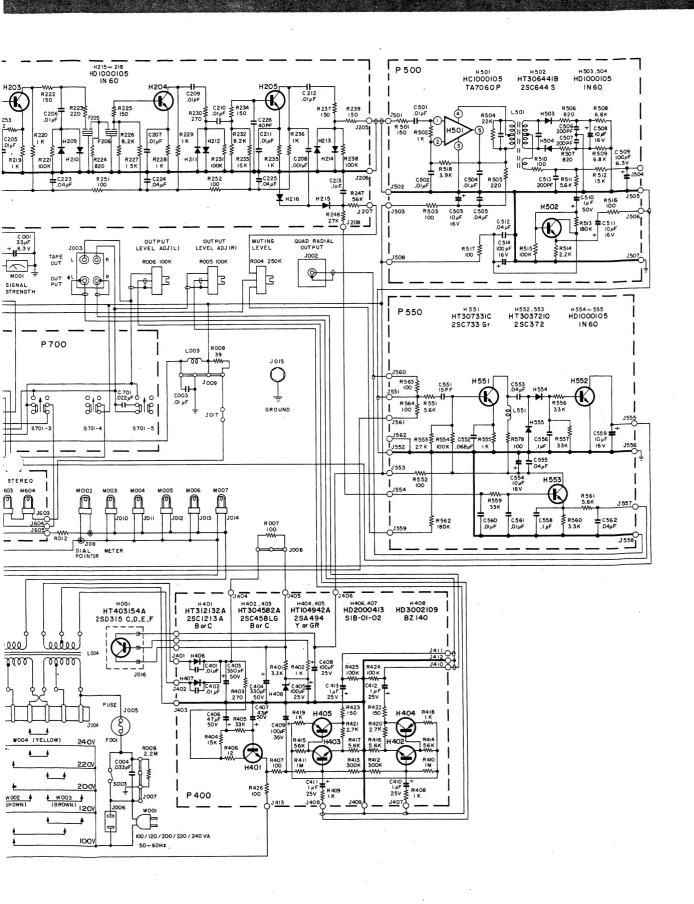


Figure 1. Schematic Diagram

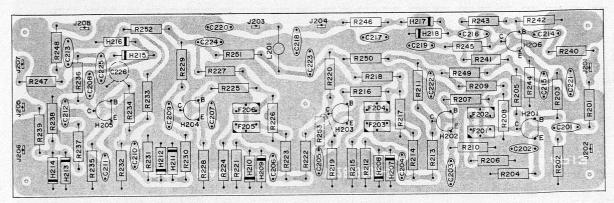


Figure 2. FM IF Amplifier Assembly P200 Component Locations

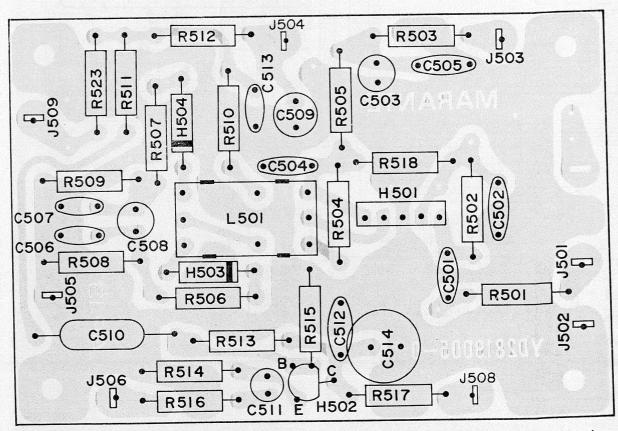


Figure 3. FM Detector Assembly P500 Component Locations

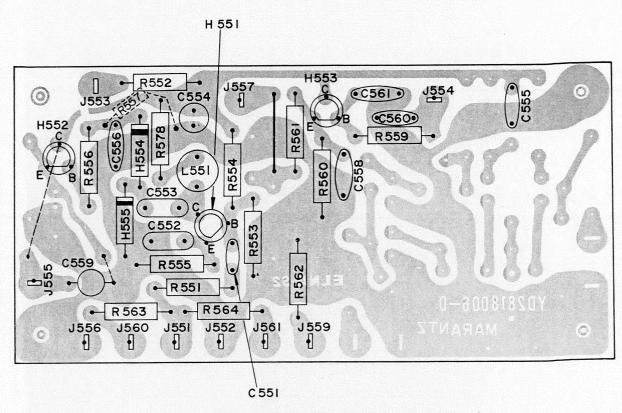


Figure 4. Muting Control Amplifier Assembly P550 Component Locations

INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for Marantz Model 110 Stereophonic Tuner.

Servicing information and voltage data included in this manual are intended for use by the knowledgeable and experienced technician only. All instruction should be read carefully. No attempt should be made to proceed without a good understanding of the operation in the receiver.

The part lists furnish information by which replacement part may be ordered from the Marantz Company. A simple description is included for parts which can be usually be obtained through local suppliers.

The Model 110 is a tuner version of the Marantz's Model 2245 Tuner/Amplifier and almost the same circuitry as used in the Model 2245 is employed except the audio Amplifier, and power supply circuit.

2. AM Tuner

All components except Tuning capacitor and ferrite bar antenna are mounted on a printed circuit board P150.

The AM signals induced in a ferrite bar antenna are applied to the base of RF amplifier transistor H151 through a capacitor of C151 and amplified to the level required for overcoming the conversion noises, thus giving good S/N performance. The tuned circuits inserted in both outand in-put circuit of the RF amplifier assure very high image and spurious rejection performance. Thus amplified and selected AM signals are then applied to the base of converter transistor H152 through a capacitor C156. While the local oscillator voltage is injected to the emitter of H152 through a capacitor C157. Both AM signals and oscillating voltage are mixed at the base-emitter junction and converted into 455KHz intermediate frequency. The resulting IF signal is applied to the first IF transformer L153 consisting of one ceramic filter and two tuned circuits.

The output of L153 is led to the transistor H153 which in turn apply its output to the transistor of next stage H154. The fully amplified IF output is then applied to the diode H157 to detect audible signal through the detector transformer L154. The detected audio signal is filtered and amplified and the final audio output is obtained from the collector of H155 and applied: to the tape out jacks and the function switch.

The DC component of the detected IF signal is used as a AGC voltage to control emitter current of H153 which in turn control the bias current of the RF amplifier through the resistor R179 and R151. A part of IF signal output is also applied to the diode H158 through a capacitor C167 and rectified to obtain DC current for energizing the AM signal strength meter MO01.

2.1 Suggestions for AM Tuner trouble shooting

Check for broken AM bar antenna, next try to tune station by rotating fly-wheel tuning knob slowly and observe the AM signal strength meter whether it deflects or not. If the signal strength meter gives a deflection at several frequencies received, no failure may exist in the stages at least preceding final IF transformer L154. Next connect a oscilloscope to the pin terminal J162 or J157 and check for audio signals with the tuning meter deflected. If the signal strength meter does not deflect, check the local oscillator circuit. Normal oscillating voltage at the hot end of the oscillator tuning capacitor is about 2 or 3 volts, varying with tuning capacitor position. When measuring oscillating voltage use a RF VTVM, no circuit tester gives correct indication. If the local oscillator voltage is normal, check all voltage distribution in the AM circuits by using a DC VTVM and compare the measured values with those given in the schematic diagram.

3. FM Tuner

The FM Tuner section of Model 110 is divided into five functional blocks: FM Front End, IF Amplifier, Detector, Muting Control and MPX Stereo Decoding Circuit.

FM signals induced by a FM antenna are led to FM antenna coil L101 through an attenuator switch and a Balun coil. These signals are then applied to the FET RF amplifier which in turn applies its output to the next FET Mixer H102 through the double tuned high selective circuits. The FET Mixer convert its input signal into 10.7 MHz intermediate frequency and amplifies it at the same time. The H103 is a local oscillator and its output is injected into the source of the FET Mixer, the injection voltage is about 700mV. The 10.7 MHz front end output is led to the next IF amplifier unit through a coaxial cable.

The IF amplifier unit consists of five stages of IF amplifier and one stage of AGC amplifier. Six pieces of ceramic filters are also used to obtain high selectivity, four stages of symmetrical diode limiters are also employed for the best limitting characteristics, improved capture ratio and good AM suppression.

A part of FM Front End output is applied to the AGC amplifier H206 and rectified its output is fed back to the gate of FET RF amplifier to decrease the gain with increased signal strength.

The IF signal sufficiently amplified through every stage of IF amplifier is finally applied to the IC limiter on the Detector Unit. The detected audio output is led to the buffer amplifier H502 and its buffered output is led to; (a) noise amplifier H551 through resistor R551 and capacitor C551, (b) Quad Radial Jack on the rear panel through resistor R564, (c) MPX stereo decoding circuit through R563.

3.1 Audio Muting and Stereo mode auto-selecting circuit

The muting circuit consisting of all solid-state electrical switching has been incorporated in the Model 110. Two inputs control the muting function. The first is related to signal strength, the second to the noise condition at the detector. These inputs are properly matrixed and gated to provide muting free from noise and transients.

The first input of DC voltage obtained by rectifing a part of IF output signal from the H205 is applied to the base of H306 and turns on it, if the IF output is greater than predetermined level (muting threshold level). When the H306 is turned on the H307 is turned off, allowing the emitter-collector resistance increasing and the collector voltage rises about 9.0V. The increased collector voltage increases the gate bias voltage and turns on the switching FET H308, decreasing the source-drain resistance to near zero ohm and allowing the audio signal applied to the source to flow to the center of 38 KHz switching transformer through the source-drain path.

When the input signal is lower than predetermined level, the DC output obtained is small and can not turn on the H306, thus the H306 keeps its turn-off state and this makes H307 turn on, decreasing the collector voltage and turning off H308. Thus no audio signals can pass through the FET. This is the fundamental principle of the muting operation but for more elaborate muting operation the second input is necessary.

The second input is used to protect the muting operation and MPX stereo beacon lamps from misoperation due to undesirable noises. The high frequency noises included in the detected audio signals are separated by a small capacitor C551 and amplified by the noise amplifier transistor H551 and its output is rectified by the two diodes. The rectified DC output is proportional to the noise components in the audio signals.

When there are excessive noises in the audio signals such as obtained with a station incorrectly tuned in, the rectified DC output turns on the transistor H522, decreasing the emitter-collector resistance to zero. This means the collector of H307 is short-circuited to the ground, therefore the H308 is turned off and any audio signals having excessive high frequency noises can not go through the FET's source-drain path.

The transistor H303 connected in series with the 19 KHz pilot signal amplifier transistor H302 is also turned off and no current flows in the H302, resulting in turning off the stereo beacon lamps. Thus misoperation due to undesirable noises is also avoided.

3.2 MPX Stereo Decoding Circuit

The buffered and non-equalized audio signals are applied to the first amplifier H301 which serve as a tuned amplifier for the pilot signal in the composite signals and as a buffer amplifier for the audio signals. The amplified 19 KHz pilot signal is led to the second 19 KHz amplifier H302 and further amplified if switching transistor H303 is turned on by the controlling DC signal as described in the preceding chapter. The final 19 KHz pilot signal is rectified by the doubler circuit consisting of the H315 and H316 to obtain synchronized 38 KHz amplifier driving signal.

The H304 is the 38 KHz tuned amplifier and supplies its output to the switching matrix circuit consisting of four diodes. While the composite signals are applied to the center tap of switching transformer 1/2 L302. The right and left stereo signals decoded by the switching circuit are led to the crosstalk cancelling amplifer which utilizes complementary configuration with NPN and PNP transistors through de-emphasis network consisting of C315 and 335, and C316 and R336. L305 is a low-pass filter networks having very sharp cut off characteristics and eliminates undesirable residual switching signals. Transistors H313 and H314 are buffer amplifiers and their outputs are led to the function switch.

3.3 Suggestion for Trouble Shooting of FM Tuner

3.3.1 Symptom: No. FM Reception

First turn on the Power switch and try to tune FM stations. Rotate the fly-wheel tuning knob slowly and observe the FM signal strength meter. If the signal strength meter deflect at several frequencies received, the tuner circuits preceding the discriminator circuit may have no failure. When no reading is obtained in the meter, check FM local oscillator circuit, using a RF VTVM. The normal local oscillator voltage is one or two volts (rms) at the tuning capacitor, depending on the tuning capacitor position. If the local oscillator voltage is normal, next check all voltage distribution in the FM Front End and IF amplifier unit and compare them with those shown in the circuit diagram. When signal strength meter deflects but no sound is obtained, check audio circuits, using high sensitive oscilloscope.

3.3.2 Symptom: No Stereo Separation

First check the "MONO" switch is in normal out position. Connect a FM RF signal generator output modulated by a stereo modulator to the rear FM antenna terminals, and check the stereo beacon is turned on or not. If not turned on, check for 19 KHz pilot signal and 38 KHz switching signal, using an oscilloscope.

4. AM Alignment Procedure

4.1 AM IF Alignment

- 1. Connect a sweep generator to the J151 and an alignment scope to the J162.
- 2. Rotate each core of IF transformer L153 and L154 for maximum height and flat top symmetrical response.

4.2 AM Frequency Range and Tracking Alignment

- 1. Set AM signal generator to 525 KHz. Turn the tuning capacitor fully closed (place the tuning pointer at the low end.) and adjust the oscillator coil L152 for maximum audio output.
- 2. Set the signal generator to 1650 KHz. Place the tuning pointer in the high frequency end and adjust the oscillator trimmer on the oscillator tuning capacitor for maximum audio output.
- 3. Repeat the step 1 and 2 until no further adjustment is necessary.
- 4. Set the generator to 600 KHz and tune the receiver to the same frequency and adjust a slug core of AM ferrite rod antenna and RF coil L151 for maximum output.
- 5. Set the generator to 1400 KHz and tune the receiver to the same frequency and adjust both trimming capacitors of Antenna and RF tuned circuit for maximum output.
- 6. Repeat the step 4 and 5 until no further adjustment is necessary.
- Note: During tracking alignment reduce the signal generator output as necessary to avoid AGC action.

5. FM Alignment Procedure

- 1. Connect a FM signal generator to the FM antenna terminals and a oscilloscope and an audio distortion analyzer to the tape output jacks on the rear panel.
- 2. Set the FM SG to 87.5 MHz and provide about 3 to 5 μ V. Place the tuning pointer at the low frequency end by rotating the tuning knob and adjust the core of oscillator coil L104 to obtain maximum audio output.
- 3. Set the FM SG to 108.5 MHz and provide about 3 to 5 μ V output. Rotate the tuning knob and place the tuning pointer at the high frequency end and adjust the trimming capacitor C106 for Maximum output.
- 4. Repeat the step 2 and 3 until no further adjustment is necessary.
- 5. Set the FM SG to 90 MHz and tune the receiver to the same frequency. Decrease signal generator output until the audio output level decreases with the decreasing generator output. Adjust the antenna coil L101, RF coil L102 and L103 and IF transformer L105 for minimum audio distortion.
- 6. Set the FM SG to 106 MHz and tune the receiver to the same frequency. Adjust the trimming capacitor C102, C104 and C105 for minimum distortion.
- 7. Adjust the secondary core (black) of discriminator transformer L501 so that the center tuning meter pointer indicates its center at no signal applied. Set the FM SG to 98 MHz and increase its output level to 1 K μ V and tune the receiver to the same frewuency so that the center tuning meter pointer indicates its center. Adjust the primary core (pink) of L501 for minimum distortion.

5.1 STEREO Separation Alignment

- 1. Set the FM SG to provide 1 $K\mu V$ at 98 MHz. Tune the receiver to the same frequency so that the center tuning meter pointer indicates its center.
- 2. Modulate the FM SG with stereo composite signal consisting of only subchannel signal (of course a pilot signal must be included). Adjust the core of L301 for maximum audio output, then, modulate the signal generator with a stereo composite signal consisting of only L channel signal and again adjust the core of L301 for maximum audio output.
- 3. Adjust the trimming resistor R365 for maximum and same separation in both channels.

5.2 Muting Circuit Alignment

- 1. Connect a VTVM across the resistor R002 and adjust the resistor R022 until the meter reads 0.75V DC at no signal.
- 2. Set the FM SG to provide 1 $K\mu V$ at 98 MHz and tune the receiver to the same frequency correctly.
- 3. Turn on MUTING push-switch. Shift the FM signal generator frequency to plus and minus and note both plus and minus shifted frequencies at which undesirable audio side responses are muted out. Adjust the R022 so that the same shifted frequencies mute the undesirable side response.

6. Test Equipment Required for Servicing

Table 1 lists the test equipment required for servicing the Model 110 Tuner.

Item	Manufacturer and Model No.	Use
AM Signal Generator		Signal source for AM alignment
Test Loop		Used with AM Signal generator
FM Signal Generator	Less than 0.3% distortion	Signal source for FM align- ment
Stereo Modulator	Less than 0.3% distortion	Stereo separation alignment and trouble shooting
Audio Oscillator	Weston Model CVO-100P, less than 0.02% residual distortion is required.	Sinewave and squarewaves signal source.
Oscilloscope	High sensitivity with DC horizontal and vertical amplifiers.	Waveform analysis and Trouble Shooting, and ASO alignment.
VTVM	With AC, DC, RF range	Voltage measurements.
Circuit Tester		Trouble Shooting

7. Voltage Conversion

This model is equipped with a universal power transformer to permit operation at 100, 120, 200, 220 and 240 V AC 50 to 60 Hz.

To convert the the Model 110 to the required voltage perform the following steps:

- (1) Remove the top cover.
- (2) Remove the Transformer Wire Connection Terminal Cover, loosen two Cover mounting screws on the rear panel, see Fig. 1.
- (3) Change the jumper wires as illustrated in Fig. 2. for the required AC voltage and replace the fuse as instructed.

CAUTION: DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERT-ING VOLTAGE.

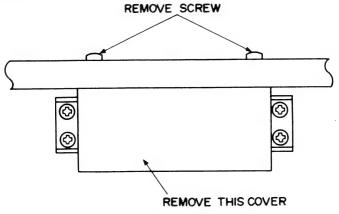
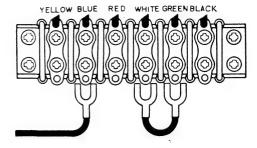
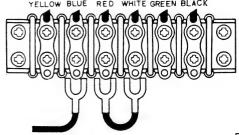


Figure 1. Remove the Terminal Cover

For 200V Operation (Use 3/10AFuse)

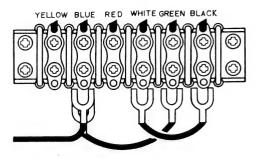


For 220 V Operation (Use 3/10 A Fuse)

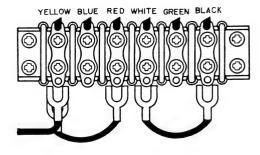


For 240V Operation (Use 3/IOA Fuse)

For IOO V Operation (UseO.5A Fuse)



For 120 V Operation (Use0.5A Fuse)



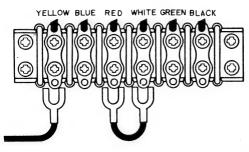


Figure 2. Voltage Conversion Chart

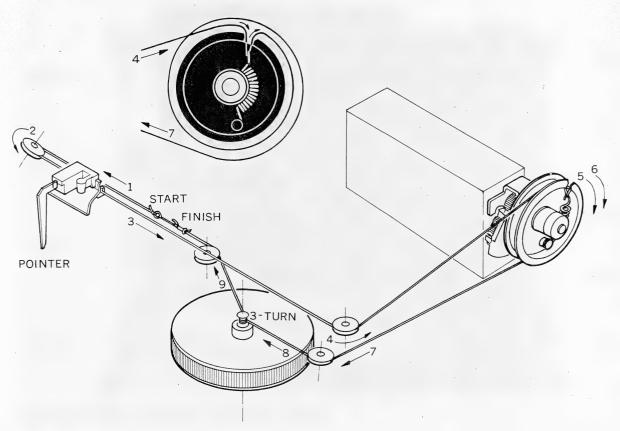
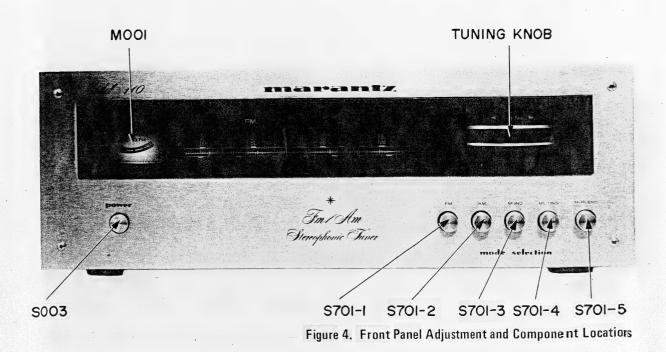


Figure 3. Dial Stringing



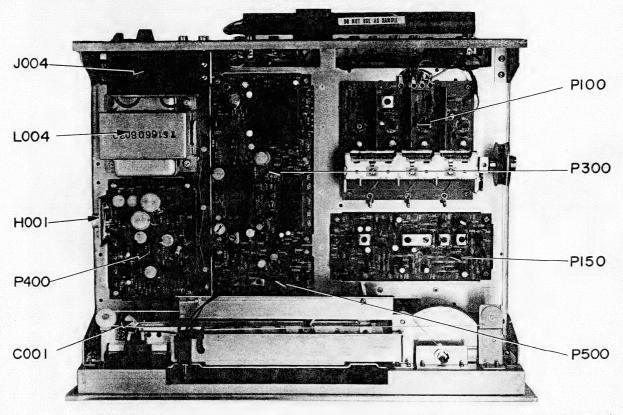


Figure 5. Main Chassis Component Locations (Top View)

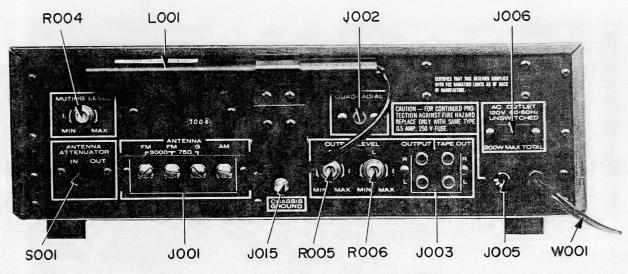


Figure 6. Rear Panel Adjustment and Component Locations

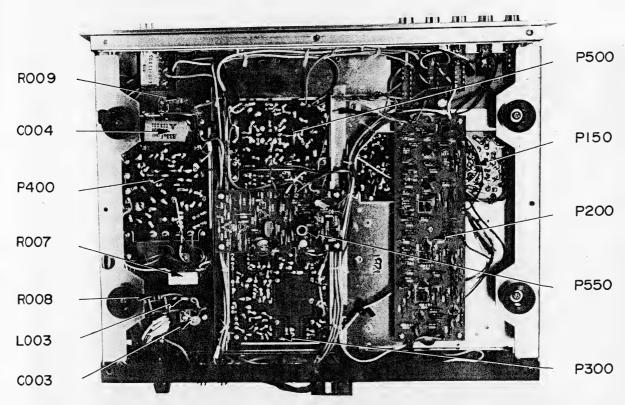


Figure 7. Main Chassis Component Locations (Bottom View)

maia reamiz

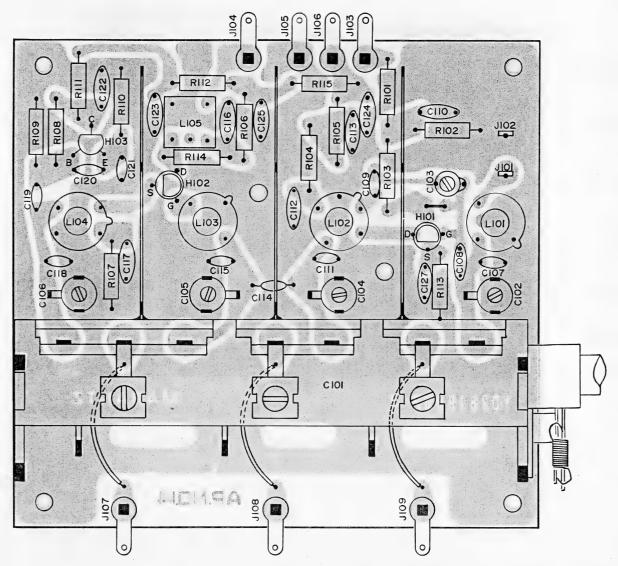


Figure 8. FM Front End Assembly P100 Component Locations

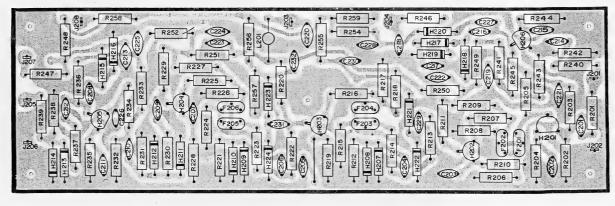


Figure 9. FM IF Amplifier Assembly P200 Component Locations

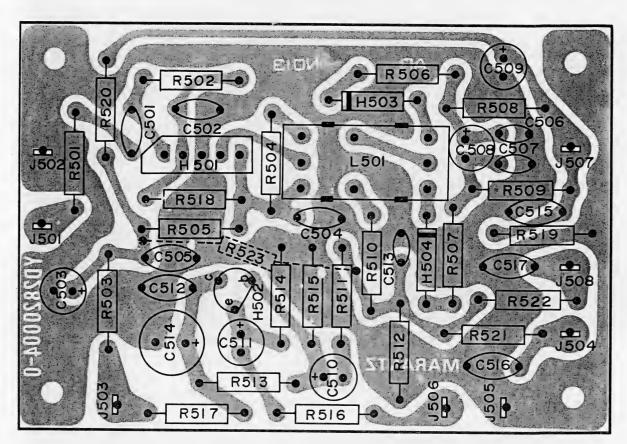


Figure 10. FM Detector P500 Component Locations

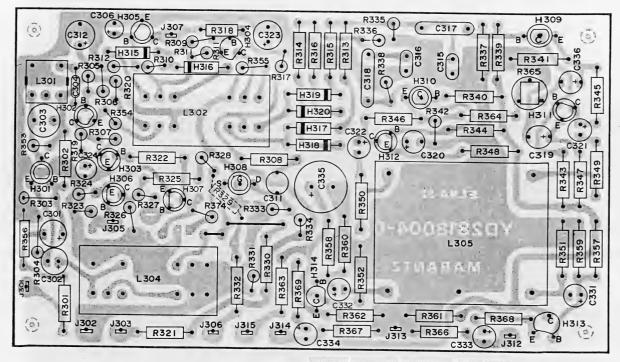


Figure 11. MPX Stereo Decoding Amplifier P300 Component Locations

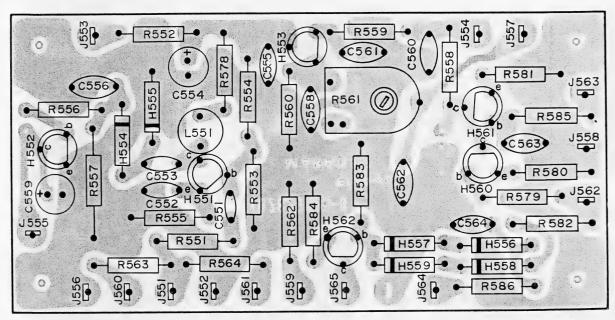


Figure 12. Muting Control Amplifier Assembly P550 Component Locations

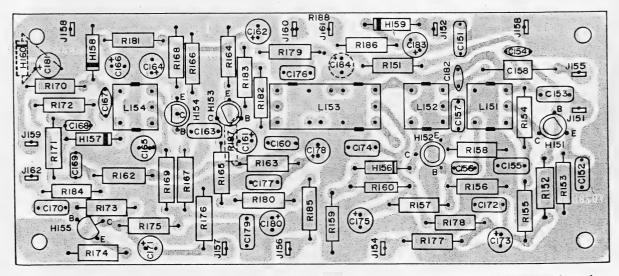


Figure 13. AM Tuner Unit Assembly P150 Component Locations

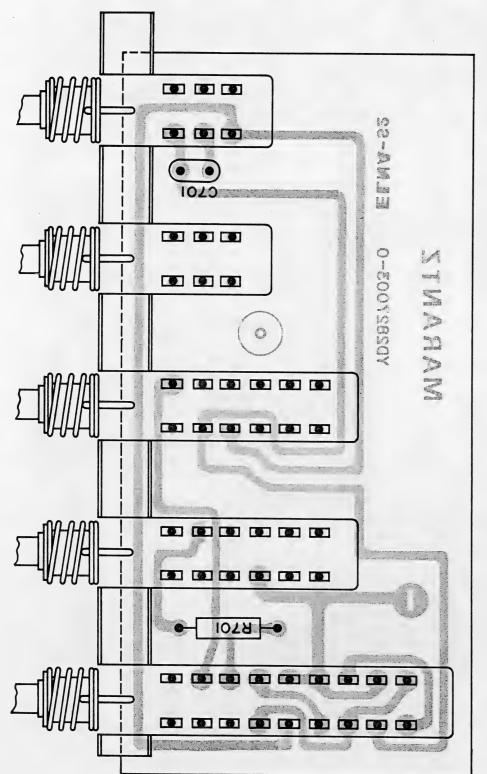


Figure 14. Mode Selection Switch Unit Assembly P700 Component Locations

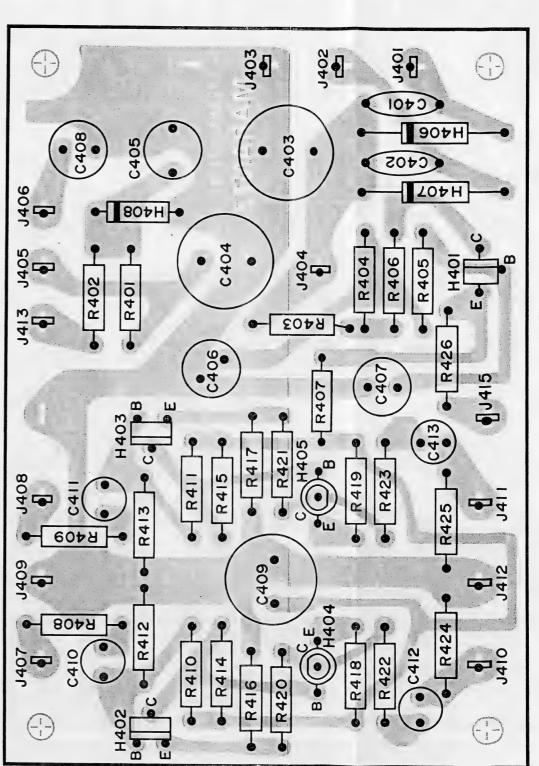


Figure 15. Pre-Amplifier and Power Supply Assembly P400 Component Locations

marantz

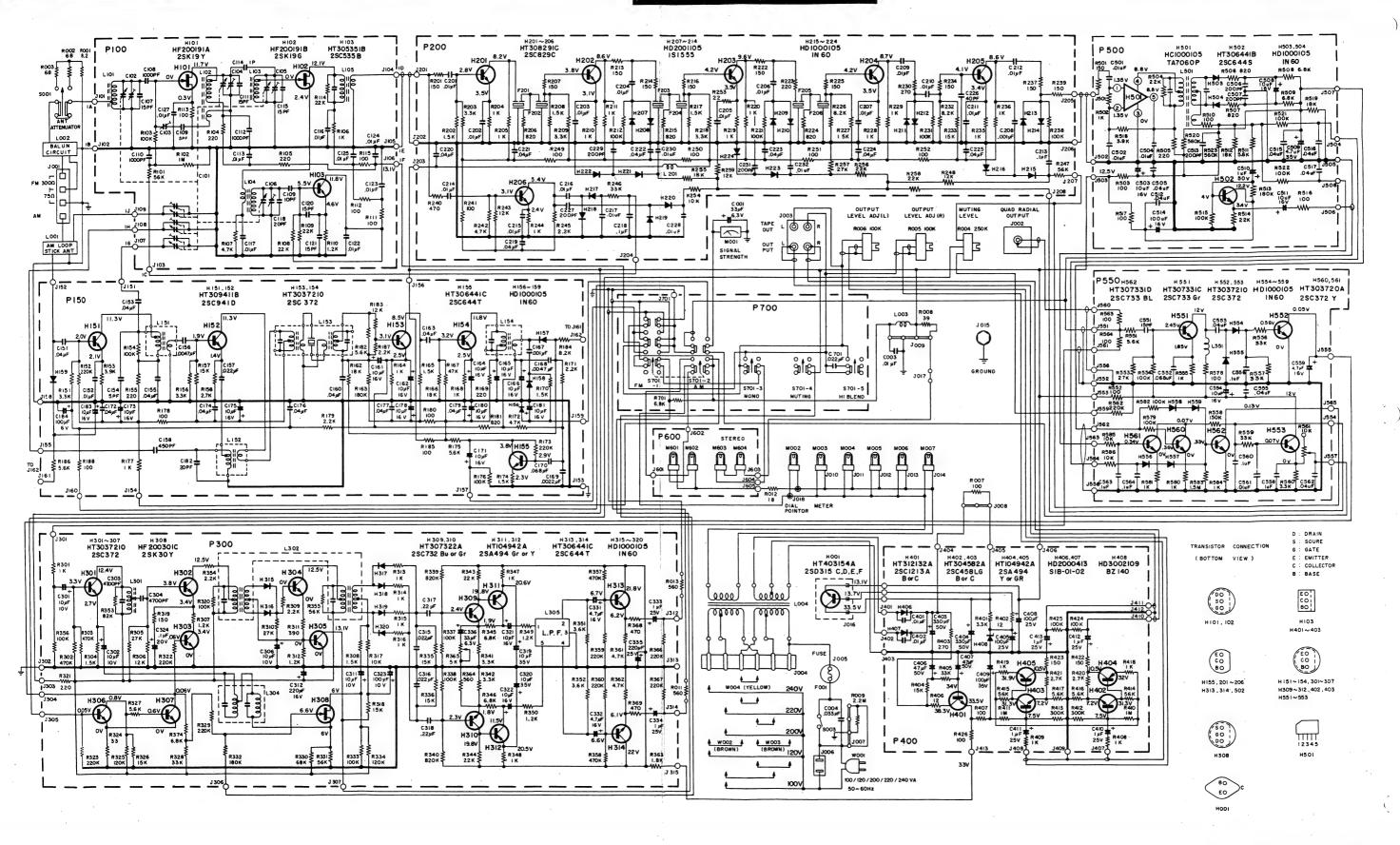


Figure 16. Schematic Diagram

REF.	MARANTZ		REF.	MARANTZ	,
DESIG.	PART NO.	DESCRIPTION	DESIG.	PART NO.	DESCRIPTION
	000740440				_
A	282740140	Frame assembly Escutcheon	0221	282715901	Drum
0101	282706301		0222	71101679M	Spring
0102	282740101	Frame	0223	281905102	Guide
0103	282715801	Window	0225	273010903	Shield x 3
0105	282705301	Cover	0226	273025901	Bush x 3
0621	51122608E	T H M screw x 4	0227	138200503	Glamper x 5
1_			0228	257700502	Glamper x 10
В	282716040	Rear bracket assembly	0229	281816006	Bracket
0124	282716002	Bracket x 2	0230	282126902	Protector
0531	51100308S	B H M screw x 2	0231	282716050	Bracket K
0532	51100308S	B H M screw x 2			
0533	55060307F	T R rivet x 2	0235	282112001	Insulator
0534	54050300R	T L washer OR x 2	0301	282716003	Bracket
J002	YT0201006	Terminal, 1P	0304	282705101	Guide
1003	YT0204003	Terminal, 4P	0306	257710602	Bearing
J006	YJ0400018	Jack, AC outlet	0307	141511801	Spacer
			0309	281810650	Bearing K
C	282727340	Fly wheel assembly	0315	282727401	Reflector
0117	257706302	Escutcheon	0316	281827101	Holder
0118	257706303	Escutcheon	0318	282716006	Bracket
0119	257727301	Fly wheel	0319	282716007	Bracket
0313	282711201	Shaft			
0415	53110603A	Hexagon nut	0320	263711203	Shaft x 2
0416	54040602A	Spring washer	0322	282716051	Bracket K
)			0326	257726201	Pulley x 4
ĺD	282710340	Pointer assembly	0330	257711803	Spacer x 2
0113	281810301	Pointer	0332	282725901	Bush
0114	281810302	Pointer	0333	282711801	Spacer x 4
0115	281805301	Cover	0334	282710701	Sheet
M002	IN1008018	Lamp, 8V	0335	282710702	Sheet x 2
			0401	51570306B	P H tapt screw x 8
E	282700640	Dial string assembly	0402	51570306B	P H tapt screw x 5
0328	120225801	Hook			
0329	72081602A	String 160	0403	51570306B	P H tapt screw x 8
0435	56382040G	Eyelet	0404	51570306B	P H tapt screw x 2
			0405	51570306B	P H tapt screw x 3
0104	281825905	Bush	0406	51570306B	P H tapt screw x 2
0107	281815401	Knob x 5	0407	51570306B	P H tapt screw x 2
0109	281815402	Knob	0408	51570306B	P H tapt screw x 2
0111	282730201	Dial	0409	51570306B	P H tapt screw x 2
0112	282705302	Cover	0410	51570306B	PH tapt screw x 2
0121	282725701	Lid	0411	51570306B	P H tapt screw x 2
0122	282825702	Lid	0412	51040306A	F H M screw x 2
0129	282726501	Indicator			
0130	257816052	Bracket K	0413	51570306B	P H tapt screw x 2
0134	281927103	Holder	0414	51040306A	F H M screw x 2
			0417	51640412D	Set screw CP
10135	53228059E	Nut x 3	0418	54040402A	Spring washer
0201	145525901	Bush	0419	53110403E	Hexagon nut
0202	275905701	Leg x 4	0420	54020601A	Flat washer P
0203	282706302	Escutcheon	0421	51570306B	P H tapt screw x 2
0210	280312001	Insutator	0422	51570306B	P H tapt screw x 4
0211	282710550	Chassis K x 2	0423	51570306B	P H tapt screw x 4
0216	282716004	Bracket x 2	0424	51570306B	P H tapt screw × 4
0217	282716005	Bracket x 2			
0219	282726901	Protector	0425	51570306B	P H tapt screw x 4
0220	282710101	Support x 2	0426	51570306B	P H tapt screw x 4

	· · · · · · · · · · · · · · · · · · ·		·	T	
REF.	MARANTZ	DECODIDATION	REF. DESIG.	MARANTZ	DESCRIPTION
DESIG.	PART NO.	DESCRIPTION	DESIG.	PART NO.	DESCRIPTION
0427	51570306B	P H tapt screw x 4	R106	RT1010214	Carbon, 1K Ω , ±10%, 1/4W
0428	51570306B	P H tapt screw x 5	R107	RT1047214	Carbon, $4.7K\Omega$, $\pm 10\%$, $1/4W$
0429	51570306B	P H tapt screw x 5	R108-R109	RT1022314	Carbon, $22K\Omega$, $\pm 10\%$, $1/4W$
0430	51570306B	P H tapt screw x 2	R110	RT1012214	Carbon, $1.2K\Omega$, $\pm 10\%$, $1/4W$
0431	51570308B	P H tapt screw x 2	R111-R113	RT1010114	Carbon, 100Ω , $\pm 10\%$, $1/4W$
0432	51060305E	P H M screw x 3	R114	RT1022314	Carbon, $22K\Omega$, $\pm 10\%$, $1/4W$
0433	51650304D	Set screw HP x 2	R115	RT1010114	Carbon, 100Ω , $\pm 10\%$, $1/4W$
0501	51570306B	P H tapt screw x 4	11		
0502	51570312B	P H tapt screw x 4	11		CAPACITORS
0503	54040402A	Spring washer x 4	C101	CA4330001	Variable FM4, AM3 Grang
		opga	C102	CT1100001	Trimmer, 1.5pF~10pF, NPO
0504	51570408B	P H tapt screw x 4	C103	CT1100002	Trimmer, 1.5pF~10pF, NPO
0506	51100306S	B H M screw x 4	C104-C106	CT1100001	Trimmer, 1.5pF~10pF, NPO
0507	51100306S	B H M screw x 2	C107	DD1615001	Ceramic, 15pF, ±10%, SL
0508	51100306S	B H M screw x 2	C108	DK1710201	Ceramic, 1000pF, ±20%, YY
0509	51100306S	B H M screw x 2	C109	DD1105001	Ceramic, 5pF, ±0.5pF, SL
0510	51100306S	B H M screw x 2	C110	DK1710201	Ceramic, 1000pF, ±20%, YY
0511	51100306S	B H M screw x 3	C111	DD1715001	Ceramic, 15pF, ±10%, SL
0515	511003048	B H M screw x 2	C112	DK1710201	Ceramic, 1000pF, ±20%, YY
0517	51100308S	B H M screw x 2			, , , , , , , , , , , , , , , , , , , ,
0518	54050300R	T L washer OR x 2	C113	DK1710301	Ceramic, 0.01μ F, $\pm 20\%$, YY
			C114	DD1001001	Ceramic, 1.0pF, ±0.25pF,SL
0519	53110303E	Hexagon nut x 2	C115	DD1615001	Ceramic, 15pF, ±10%, SL
0521	53110403E	Hexagon nut	C116-C117	DK1710301	Ceramic, $0.01\mu\text{F}$, $\pm 20\%$, YY
0522	54020401E	Flat washer P	C118	DD1620004	Ceramic, 20pF, ±10%, PH
0523	54050400R	T L washer OR	C119	DD1210006	Ceramic, 10pF, ±1pF, CH
0524	62041760W	Lug	C120	DD1615003	Ceramic, 15pF, ±10%, CH
0525	51100310S	B H M screw x 2	C121	DD1615003	Ceramic, 15p F, ±10%, CH
0526	53110303E	Hexagon nut x 2	C122-C125	DK1710301	Ceramic, $0.01\mu\text{F}$, $\pm 20\%$, YY
0527	54060300R	T L washer IR x 5	C127	DK1710301	Ceramic, $0.01\mu\text{F}$, $\pm 20\%$, YY
0535	53110303E	Hexagon nut x 4			
0612	64002500R	RG Ring E x 2			TRANSFORMERS
			L101	LA1202603	Ant. Coil
0613	51570308B	P H tapt screw	L102	LA1202604	RF Coil
0614	53110303A	Hexagon nut	L103	LA1202605	RF Coil
0615	54050300R	T L washer OR x 5	L104	LO1202603	OSC Coil
0616	51570306B	P H tapt screw x 3	L105	LI1001601	IFT
0617	51100306S	B H M screw x 2			
0618	59030805P	Washer x 4			SEMICONDUCTORS
0619	54040302A	Spring washer x 5	H101	HF200191A	Transistor 2SK19 Y
0620	59030805P	Washer	H102	HF200191B	Transistor 2SK19 G
0622	51100406S	B H M screw x 8	H103	HT305351B	Transistor 2SC535 B
0624	51100406S	B H M screw x 4			
]		MISCELLANEOUS
0625	54020401S	Flat washer P x 4	J101-J102	YP1000094	Plug
0627	51570410B	P H tapt screw x 4	J103-J109	57271240W	Lug Eyelet
0628	54020401E	Flat washer P x 4	11		
0629	54040402N	Spring washer x 4	P150	YD2818002	P. C. Board
·				(ZZ2818002)	
P100	YD2819002	P. C. Board			•
	(ZZ2819002)		11		RESISTORS
			R151	RT1033214	
		RESISTORS	R152	RT1022414	Carbon, 220 K Ω , $\pm 10\%$, $1/4$ W
R101	RT1056314	Carbon, $56K\Omega$, $\pm 10\%$, $1/4W$	R153	RT1039214	
R102	RT1010514	Carobn, $1M\Omega$, $\pm 10\%$, $1/4W$	1 1		
R103	RT1010414	Carbon, 100 K Ω , ± 10 %, $1/4$ W			
R104-R105	RT1022114	Carbon, 220Ω , $\pm 10\%$, $1/4W$			
R101 R102 R103	RT1056314 RT1010514 RT1010414	P. C. Board Assembly RESISTORS Carbon, $56K\Omega$, $\pm 10\%$, $1/4W$ Carbon, $100K\Omega$, $\pm 10\%$, $1/4W$ Carbon, $100K\Omega$, $\pm 10\%$, $1/4W$	I 1	RT1022414	Carbon, 3.3 Κ Ω , $\pm 10\%$, $1/4$ Carbon, 220 Κ Ω , $\pm 10\%$, $1/4$ Carbon, 3.9 Κ Ω , $\pm 10\%$, $1/4$ Carbon, 100 Κ Ω , $\pm 10\%$, $1/4$ Carbon, 220 Ω, $\pm 10\%$, $1/4$

_						555				
1	REF.	MARANTZ	250021			REF.	MARANTZ	55005	1571011	
ı	DESIG.	PART NO.	DESCRI	PIION		DESIG.	PART NO.	DESCR	IPTION	
Γ.	2457	DT101F314	Carban 15KO	±100/	1/410/	0175	E A 1000100		· E	16V
	R157	RT1015314	Carbon, 15KΩ,	±10%,	1/4W	C175	EA1060169	Elect., 10,		
	R158	RT1027214	Carbon, $2.7K\Omega$,	±10%,	1/4W	C176-C177	DF1740301			±20%
	R159	RT1082314	Carbon, $82K\Omega$,	±10%,	1/4W	C178	EA1060169		•	16V
	R160	RT1015214	Carbon, 1.5K Ω ,	±10%,	1/4W	C179	DF1740301			±20%
	R162	RT1018314	Carbon, $18K\Omega$,	±10%,	1/4W	C180	EA1060169	Elect., 10µ	ιF,	16V
1	R163	RT1018414	Carbon, $180K\Omega$,	±10%,	1/4W	C181	EA1060169	Elect., 10µ	ιF,	16V
	R164	RT1010214	Carbon, $1K\Omega$,	±10%,	1/4W	C182	DD1620001	Ceramic, 20p		±10%
	R165	RT1015214	Carbon, $1.5K\Omega$,	±10%,	1/4W	C183	EA1060169			16V
	R166	RT1018314	Carbon, $18K\Omega$,	±10%,	1/4W	C184	EA1070109		•	10V
	3167	RT1047314	Carbon, $47K\Omega$,	±10%,	1/4W	10104	- LA 1070105	Licet.,	,,	
Ι.	,	1111017011	Guibon, Witter,	_10,0,	'', '''			TRANSFORMER	9	i
١,	R168	RT1010214	Carbon, $1K\Omega$,	±10%.	1/4W	1.454	1 4 1001017			į
						L151	LA1001017)μH	ı
	R169	RT1022114	Carbon, 220Ω ,	±10%,	1/4W	L152	LO1001042	•)μΗ	ı
	R170	RT1015214	Carbon, $1.5K\Omega$,	±10%,	1/4W	L153	LI1028002	IFT		
	R171	RT1022214	Carbon, $2.2K\Omega$,	±10%,	1/4W	L154	LI1001048	IFT		
	R172	RT1047214	Carbon, $4.7 \mathrm{K}\Omega$,	±10%,	1/4W	L153	LI1028003	IFT		
F	R173	RT1022414	Carbon, 220K Ω ,	±10%,	1/4W					
F	R174	RT1015214	Carbon, $1.5K\Omega$,	±10%,	1/4W			MISCELLANEOU	S	
- F	R175	RT1056214	Carbon, 5.6K Ω ,	±10%,	1/4W	J151-J162	YP1000094	Plug		
	R176	RT1010414	Carbon, $100 \text{K}\Omega$,	±10%,	1/4W					
	R177	RT1010214	Carbon, $1K\Omega$,	±10%,	1/4W			SEMICONDUCTO	RS	- 1
Ι.	``''	1111010214	ourbon, rivar,	_1070,	'' '''	H151-H152	нт309411В	Transistor 2SC941		1
١,	2170	RT1010114	Carbon, 100Ω ,	±10%,	1/4W		HT3037210	Transistor 2SC372		I
	R178					H153-H154				
	R179	RT1022214	Carbon, $2.2K\Omega$,	±10%,	1/4W	H155	HT306441C	Transistor 2SC644	(1)	l l
	R180	RT1010114	Carbon, 100Ω ,	±10%,	1/4W	H156-H160	HD1000105	Diode 1N60		
	R181	RT1082114	Carbon, 820 Ω ,	±10%,	1/4W					
	R182	RT1056214	Carbon, $56 \mathrm{K}\Omega$,	±10%,	1/4W	P200	YD2819008	P. C. Board		1
F	R183	RT1012314	Carbon, $12K\Omega$,	±10%,	1/4W		(ZZ2819008)	P. C. Board Assem	bly	
F	₹184	RT1082214	Carbon, $8.2K\Omega$,	±10%,	1/4W					
- F	R185	RT1010114	Carbon, 100Ω ,	±10%,	1/4W			RESISTORS		
	R186	RT1056214	Carbon, $5.6K\Omega$,	±10%,	1/4W	R201	RT1015114	Carbon, 150 Ω ,	±10%,	1/4W
	R187	RT1022214	Carbon, 2.2KΩ,	±10%,	1/4W	R202	RT1015214	Carbon, $1.5 K\Omega$,	±10%,	1/4W
- ['			04.50.1, 2.2.131,	,	.,	R203	RT1033214	Carbon, $3.3K\Omega$,	±10%,	1/4W
١,	₹188	RT1010114	Carbon, 100Ω ,	±10%,	1/4W	R204-R205	RT1010214	Carbon, $1K\Omega$,	±10%,	1/4W
- ['	1100	1111010114	Carbon, 10032,	±1070,	1/400	R206	RT1082114	Carbon, 820Ω ,	±10%,	1/4W
			CAPACITORS			R207	RT1002114		±10%,	1/4W
I,	3454	DE1740001		+200				Carbon, 150 Ω ,		
	C151	DF1740301	Mylar, $0.04\mu\text{F}$,	±20%		R208	RT1051214	Carbon, 1.5 K Ω ,	±10%,	1/4W
	C152	DF1710301	Mylar, 0.01μ F,	±20%		R209	RT1033214	Carbon, 3.3 K Ω ,	±10%,	1/4W
	C153	DF1740301	Mylar, 0.04μ F,	±20%		R210-R211	RT1010214	Carbon, $1K\Omega$,	±10%,	1/4W
	C154	DD1105001	Ceramic, 5pF,	±0.5pF	,	R212	RT1010414	Carbon, $100 \text{K}\Omega$,	±10%,	1/4W
	C155	DF1740301	Mylar, 0.04μ F,	±20%	.	1				
	C156	DF1747201	Mylar, $0.0047\mu\text{F}$	±20%		R213-R214	RT1015114	Carbon, 150 Ω ,	±10%,	1/4W
	C157	DF1722301	Mylar, $0.022\mu F$,	±20%		R215	RT1082114	Carbon, 820Ω ,	±10%,	1/4W
	C158	DF6545101	Mylar, 450pF,	±5%	1	R216	RT1015114	Carbon, 150 Ω ,	±10%,	1/4W
	C160	DF1740301	Mylar, $0.04\mu F$,	±20%		R217	RT1015214	Carbon, $1.5 K\Omega$,	±10%,	1/4W
	C161-C162	EA1060169	Elect., 10μF,	16V		R218	RT1033214	Carbon, 3.3 K Ω ,	±10%,	1/4W
l`		_,	, 10µ1,			R219-R220	RT1010214	Carbon, $1K\Omega$,	±10%,	1/4W
.1.	C163	DE1740201	Mylar O MuE	±20%		R221	RT1010214	Carbon, $100 \mathrm{K}\Omega$,	±10%,	1/4W
		DF1740301	Mylar, 0.04μF,						±10%,	1/4W
	C164-C166	EA1060169	Elect., 10μF,	16V		R222	RT1015114	Carbon, 150 Ω ,		
	C167	DK1710201	Ceramic, 0.001μF,	±20%		R223	RT1022114	Carbon, 220Ω ,	±10%,	1/4W
	C168	DF1747201	Mylar, 0.0047μ F			R224	RT1082114	Carbon, 820Ω ,	±10%,	1/4W
	C169	DF1722201	Mylar, $0.0022\mu F$, ±20%						
10	C170	DF1668301	Mylar, 0.068μF,	±10%		R225	RT1015114	Carbon, 150 Ω ,	±10%,	1/4W
70	C171	EA1060169	Elect., 10μF,	16V		R226	RT1082214	Carbon, 8.2 K Ω ,	±10%,	1/4W
	C172	DF1740301	Mylar, 0.04μ F,	±20%		R227	RT1015314	Carbon, 15K Ω ,	±10%,	1/4W
	C173	EA1060169	Elect, 10μF,	16V		R228-R229	RT1010214	Carbon, $1K\Omega$,	±10%,	1/4W
	C174	DF1740301	Mylar, 0.04μF,	±20%		R230	RT1027114	Carbon, 270Ω ,	±10%,	1/4W
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DESIG. PART NO. DESCRIPTION DESIGN PART NO. DESCRIPTION	REF.	MARANTZ	•			REF.	MARANTZ	DESCRI	PTION	
R231 RT1010414 Carbon, 100KΩ, ±10%, 1/4W R302 RT1010214 Carbon, 15KΩ, ±10%, 1/4W R302 R31010214 Carbon, 15KΩ, ±10%, 1/4W R302 R31010214 Carbon, 15KΩ, ±10%, 1/4W R304 RT1015214 Carbon, 15KΩ, ±10%, 1/4W R306 RT1012314 Carbon, 15KΩ, ±10%, 1/4W R307 RT1012314 Carbon, 15KΩ, ±10%, 1/4W R308 RT1012314 Carbon, 15KΩ, ±10%, 1/4W R309 RT1012314 Carbon, 15KΩ, ±10%, 1/4W R309 RT1012314 Carbon, 17KΩ, ±10%, 1/4W R310 RT1012314 Carbon, 17KΩ, ±10%, 1/4W R310 RT1012314 Carbon, 17KΩ, ±10%, 1/4W R311 RT1012314 Carbon, 17KΩ, ±10%, 1/4W R312 RT1012314 Carbon, 17KΩ, ±10%, 1/4W R313 RT1012314 Carbon, 17KΩ, ±10%, 1/4W R318 RT1013314 Carbon, 17KΩ, ±10%, 1/4W R322 RT1012314 Carbon, 17KΩ, ±10%, 1/4W R322 RT1012414 Carbon, 17KΩ, ±10%, 1/4W R322 RT1012314 Carbon, 17KΩ, ±10%, 1/4W R318 RT1013314 Carbon, 17KΩ, ±10%, 1/4W R318 RT1013134 Carbon, 17KΩ, ±10%, 1/4W R318 RT1013144			DESCRIPTION							
R2322 RT1082214 Carbon, 8.2KΩ, ±10%, 1/4W 8301 RT1016214 Carbon, 15KΩ, ±10%, 1/4W 1308 RR1046714 Carbon, 15KΩ, ±10%, 1/4W 1308 RR1046714 Carbon, 15KΩ, ±10%, 1/4W 1308 RR1046714 Carbon, 15KΩ, ±10%, 1/4W 1308 RR1016214 Carbon, 15KΩ, ±10%, 1/4W R306 RT1016214 Carbon, 15KΩ, ±10%, 1/4W R306 RT1012314 Carbon, 15KΩ, ±10%, 1/4W R306 RT1012314 Carbon, 15KΩ, ±10%, 1/4W R309 RT1012314 Carbon, 15KΩ, ±10%, 1/4W R309 RT1012314 Carbon, 15KΩ, ±10%, 1/4W R310 RT1012314 Carbon, 15KΩ, ±10%, 1/4W R310 RT1012314 Carbon, 15KΩ, ±10%, 1/4W R310 RT1012314 Carbon, 15KΩ, ±10%, 1/4W R311						DEGIG.	174111110			
R233 RT101514 Carbon, 156Ω, ±10%, 140W, R304 R302-R303 RN1047414 Carbon, 476Ω, ±10%, 140W, R306 RT101514 Carbon, 15Ω, ±10%, 140W, R306 RT1012214 Carbon, 27KΩ, ±10%, 140W, R306 RT1012214 Carbon, 12KΩ, ±10%, 140W, R306 RT1012214 Carbon, 12KΩ, ±10%, 140W, R310 RT1012214 Carbon, 12KΩ, ±10%, 140W, R310 RT102214 Carbon, 12KΩ, ±10%, 140W, R311 RT103134 Carbon, 12KΩ, ±10%, 140W, R312 RT103134 Carbon, 12KΩ, ±10%, 140W, R318 RT1012314 Carbon, 12KΩ, ±10%, 140W, R322-R323 RT1010114 Carbon, 12KΩ,	R231	RT1010414	Carbon, $100 \text{K}\Omega$,	±10%,	1/4W			RESISTORS		
R234 RT1015114 Carbon, 15ΩΩ, ±10%, 14W 3306 RT1015214 Carbon, 15ΩΩ, ±10%, 14W 3306 RT1015214 Carbon, 15ΩΩ, ±10%, 14W 3306 RT102214 Carbon, 15ΩΩ, ±10%, 14W 3306 RT102214 Carbon, 15ΩΩ, ±10%, 14W 3306 RT1012314 Carbon, 15ΩΩ, ±10%, 14W 3308 RT1012314 Carbon, 15ΩΩ, ±10%, 14W R3308 RT1012314 Carbon, 15ΩΩ, ±10%, 14W R3308 RT1012314 Carbon, 15ΩΩ, ±10%, 14W R3310 RT1012314 Carbon, 15ΩΩ, ±10%, 14W R3310 RT1012314 Carbon, 15ΩΩ, ±10%, 14W R311 RT1022314 Carbon, 15ΩΩ, ±10%, 14W R311 RT1012314 Carbon, 15ΩΩ, ±10%, 14W RT1012314		RT1082214	Carbon, $8.2 \mathrm{K}\Omega$,	±10%,	1/4W	R301	RT1010214	Carbon, $1K\Omega$,	±10%,	1/4W
R236 RT1010214 Carbon, 18CJ, ±10%, 1/4W, R23B R305 RT102314 Carbon, 2XCJ, ±10%, 1/4W, R30B RT1012314 Carbon, 18CJ, ±10%, 1/4W, R30B RT1012314 Carbon, 12CG, ±10%, 1/4W, R30B RT1012314 Carbon, 12CG, ±10%, 1/4W, R30B RT101214 Carbon, 12CG, ±10%, 1/4W, R30B RT1012314 Carbon, 12CG, ±10%, 1/4W, R30B RT1012314 Carbon, 12CG, ±10%, 1/4W, R30B RT1012314 Carbon, 12CG, ±10%, 1/4W, R31B RT1012314 Carbon, 12CG, ±10%, 1/4W R32B RT1012314				±10%,		R302-R303	RN1047414	Carbon, 470 K Ω ,	±10%,	1/4W
R7338 RT1015114 Carbon, 190Ω, ±10%, 1/4W R309 RT1015214 Carbon, 12κΩ, ±10%, 1/4W R329 RT1015114 Carbon, 190Ω, ±10%, 1/4W R309 RT1015114 Carbon, 190Ω, ±10%, 1/4W R309 RT1015214 Carbon, 15κΩ, ±10%, 1/4W R310 RT1015314 Carbon, 15κΩ, ±10%, 1/4W R310 RT1015314 Carbon, 15κΩ, ±10%, 1/4W R310 RT1015314 Carbon, 15κΩ, ±10%, 1/4W R329 RT1015314			Carbon, 150Ω ,	±10%,	1/4W	R304	RT1015214	Carbon, 1.5K Ω ,	±10%,	1/4W
R239 RT1010414 Carbon, 100KΩ, ±10%, 1/4W, R240 R10105114 Carbon, 100KΩ, ±10%, 1/4W, R240 R10105114 Carbon, 470Ω, ±10%, 1/4W, R240 R1047114 Carbon, 470Ω, ±10%, 1/4W, R240 R1047114 Carbon, 470Ω, ±10%, 1/4W, R310 R10105114 Carbon, 27KΩ, ±10%, 1/4W, R310 R101027314 Carbon, 27KΩ, ±10%, 1/4W, R310 R101027314 Carbon, 27KΩ, ±10%, 1/4W, R310 R101027314 Carbon, 27KΩ, ±10%, 1/4W, R313 R101027314 Carbon, 27KΩ, ±10%, 1/4W, R313 R10102314 Carbon, 27KΩ, ±10%, 1/4W, R313 R10102314 Carbon, 12KΩ, ±10%, 1/4W, R313 R10102314 Carbon, 12KΩ, ±10%, 1/4W, R319 R10102314 Carbon, 12KΩ, ±10%, 1/4W, R319 R10102314 Carbon, 12KΩ, ±10%, 1/4W, R319 R1010134 Carbon, 12KΩ, ±10%, 1/4W, R319<		RT1010214	Carbon, $1K\Omega$,	±10%,	1/4W	R305	RT1027314	Carbon, $2.7K\Omega$,	±10%,	1/4W
R239		RT1015114	Carbon, 150Ω ,	±10%,	1/4W	R306	RT1012314	Carbon, $12K\Omega$,	±10%,	1/4W
R240 RT1047114 Carbon, 470Ω, ±10%, ±10%, 1/4W 1/4W R300 RT1022214 Carbon, 27KΩ, ±10%, 1/4W R1002214 Carbon, 18Ω, ±10%, 1/4W R102214 Carbon, 12RQ, ±10%, 1/4W R102		RT1010414	Carbon, $100 \mathrm{K}\Omega$,	±10%,	1/4W	R307	RT1012214	Carbon, 1.2K Ω ,	±10%,	1/4W
R241 RT1010114 Carbon, 100Ω, ±10%, 1/4W 1/4W R310 RT1027314 Carbon, 200Ω, ±10%, 1/4W R1107214 Carbon, 4.7KΩ, ±10%, 1/4W R311 RT1027314 Carbon, 12KΩ, ±10%, 1/4W R11012214 Carbon, 12KΩ, ±10%, 1/4W R312 RT1012214 RT1012214 Carbon, 12KΩ, ±10%, 1/4W R318 RT1010214 Carbon, 10KΩ, ±10%, 1/4W R318 RT1010314 Carbon, 10KΩ, ±10%, 1/4W R318 RT1015314 Carbon, 10KΩ, ±10%, 1/4W R318 RT1015314 Carbon, 10KΩ, ±10%, 1/4W R319 RT1015314 Carbon, 10KΩ, ±10%, 1/4W R320 RT1015314 Carbon, 10KΩ, ±10%, 1/4W R320 RT1015314 Carbon, 10KΩ, ±10%, 1/4W R320 RT1015314 Carbon, 10KΩ, ±10%, 1/4W R322 R323 RT1015314 Carbon, 10KΩ, ±10%, 1/4W R322 R322 R323 RT1015314 Carbon, 150KΩ, ±10%, 1/4W R320 RT1012314 RT102314 Carbon, 150KΩ, ±10%, 1/4W R320 RT1012314 RT102314 Carbon, 150KΩ, ±10%, 1/4W <td></td> <td></td> <td>Carbon, 150Ω,</td> <td>±10%,</td> <td>1/4W</td> <td>R308</td> <td>RT1015214</td> <td>Carbon, 1.5KΩ,</td> <td>±10%,</td> <td>1/4W</td>			Carbon, 150 Ω ,	±10%,	1/4W	R308	RT1015214	Carbon, 1.5K Ω ,	±10%,	1/4W
R242 RT1047214 Carbon, 4.7KΩ, ±10%, 1/4W 1/4W R311 RT1039114 Carbon, 390Ω, ±10%, 1/4W 1/4W R243 RT10102214 Carbon, 12KΩ, ±10%, ±10%, 1/4W R312 R313-R316 RT1012214 Carbon, 12KΩ, ±10%, 1/4W R312 R71012214 Carbon, 15KΩ, ±10%, 1/4W R317 R71010214 Carbon, 15KΩ, ±10%, 1/4W R317 R71010314 Carbon, 15KΩ, ±10%, 1/4W R318 R318 R318 R318 R316 R71010214 Carbon, 15KΩ, ±10%, 1/4W R318 R318 R318 R316 R71010314 Carbon, 15KΩ, ±10%, 1/4W R318 R318 R318 R316 R71010314 Carbon, 15KΩ, ±10%, 1/4W Carbon, 15KΩ, ±10%, 1/4W R318 R318 R319 R71010314 Carbon, 15KΩ, ±10%, 1/4W R328 R71010314 Carbon, 10KΩ, ±10%, 1/4W R328 R71012414 Carbon, 15KΩ, ±10%, 1/4W R328 R71012414 Carbon, 12KΩ, ±10%, 1/4W R328 R71022414 Carbon, 12KΩ, ±10%, 1/4W R328 R71012414 Carbon, 12KΩ, ±10%, 1/4W R328 R71012414 Carbon, 12KΩ, ±10%, 1/4W R328 R71012414 Carbon, 12KΩ, ±10%, 1/			Carbon, 470Ω ,	±10%,	1/4W	R309	RT1022214	Carbon, $2.2K\Omega$,	±10%,	1/4W
R242 RT1047214 Carbon, 4.7KΩ, ±10%, 1/4W R312 RT1012214 Carbon, 1.2KΩ, ±10%, 1/4W R312 RT1012214 Carbon, 1.2KΩ, ±10%, 1/4W R313-R316 RT1012214 Carbon, 1.2KΩ, ±10%, 1/4W R318-R316 RT1010214 Carbon, 1.2KΩ, ±10%, 1/4W R318-R316 RT1010314 Carbon, 1.2KΩ, ±10%, 1/4W R320 RT1010314 Carbon, 1.2KΩ, ±10%, 1/4W R322-R323 RT1010314 Carbon, 1.2KΩ, ±10%, 1/4W R322-R323 RT1022414 Carbon, 1.2KΩ, ±10%, 1/4W R322-R323 RT1022414 Carbon, 1.2KΩ, ±10%, 1/4W R324 RT1032414 Carbon, 1.2KΩ, ±10%, 1/4W R325 RT1052414 Carbon, 2.2KΩ, ±10%, 1/4W R326 RT1052414 Carbon, 1.2KΩ, ±10%, 1/4W R326 RT1052414 Carbon, 1.2KΩ, ±10%, 1/4W R326 RT105241 Carbon, 1.5KΩ, ±10%, 1/4W Carbon, 1.2KΩ, ±10%, 1/4W R326 RT1052414 Carbon, 1.2KΩ, ±10%, 1/4W R326 RT1052414 Carbon, 1.2KΩ, ±10%, 1/4W R326 RT1052414 Carbon, 1.5KΩ, ±10%, 1/4W Car	R241	RT1010114	Carbon, 100Ω ,	±10%,	1/4W	R310	RT1027314	Carbon, $27K\Omega$,	•	
R243 RT1012214 Carbon, 12KΩ, ±10%, 1/4W R102244 RT10102214 Carbon, 12KΩ, ±10%, 1/4W R312 RT1010214 Carbon, 12KΩ, ±10%, 1/4W R317 R318 RT1010214 Carbon, 12KΩ, ±10%, 1/4W R318 RT1010314 Carbon, 10KΩ, ±10%, 1/4W R318 RT1010314 Carbon, 10KΩ, ±10%, 1/4W R319 RT1010314 Carbon, 10KΩ, ±10%, 1/4W R320 RT1010314 Carbon, 10KΩ, ±10%, 1/4W R321 RT1010314 Carbon, 10KΩ, ±10%, 1/4W R322 RT1010314 Carbon, 10KΩ, ±10%, 1/4W R322 RT1010314 Carbon, 10KΩ, ±10%, 1/4W R322 RT1022144 Carbon, 12KΩ, ±10%, 1/4W R322 RT1022144 Carbon, 12KΩ, ±10%, 1/4W R322 RT1022144 Carbon, 12KΩ, ±10%, 1/4W Carbon, 12KΩ, ±10%, 1/4W R322 RT1022144 Carbon, 12KΩ, ±10%, 1/4W R322 RT1012344 Carbon, 12KΩ, ±10%, 1/4W R322 RT1012344 Carbon, 12KΩ, ±10%, 1/4W Carbon, 12KΩ, ±10%, 1/4W R322 RT1012344 Carbon, 12KΩ, ±10%, 1/4W C						R311	RT1039114	Carbon, 390 Ω ,	±10%,	1/4W
R244 RT1010214 Carbon, 1 (Σ L) ±10% 1/4W R313.R316 RT0510214 Carbon, 1 (Σ L) ±5% 1/4W R246 RT1033314 Carbon, 2 (Σ L) ±10% 1/4W R318 RT1010314 Carbon, 10KΩ ±10% 1/4W R248 RT1010314 Carbon, 15KΩ ±10% 1/4W R318 RT1010314 Carbon, 10KΩ ±10% 1/4W R254 RT1010114 Carbon, 10KΩ ±10% 1/4W R320 RT1010214 Carbon, 10KΩ ±10% 1/4W R254 RT101314 Carbon, 10KΩ ±10% 1/4W R321 RT102214 Carbon, 10KΩ ±10% 1/4W R321 RT102214 Carbon, 12KΩ ±10% 1/4W R322 RT102314 Carbon, 2KΩ ±10% 1/4W R325 RT102314 Carbon, 12KΩ ±10% 1/4W R327 RT106314 Carbon, 15KΩ ±10% 1/4W R327 RT106314 Carbon, 15KΩ ±10% 1/4W R322 RT1010314 Carbon, 15KΩ Carbon, 15KΩ				•						
R245 RT1022214 Carbon, 22KΩ, ±10%, 1/4W R317 RT1010314 Carbon, 10KΩ, ±10%, 1/4W R1068314 Carbon, 56KΩ, ±10%, 1/4W R318 RT1011514 Carbon, 10KΩ, ±10%, 1/4W R319 RT1016314 Carbon, 10KΩ, ±10%, 1/4W R319 RT1016314 Carbon, 10KΩ, ±10%, 1/4W R320 RT1010114 Carbon, 10KΩ, ±10%, 1/4W R321 RT10102114 Carbon, 10KΩ, ±10%, 1/4W R322 RT10102114 Carbon, 10KΩ, ±10%, 1/4W R322 RT1022114 Carbon, 10KΩ, ±10%, 1/4W R322 RT1022114 Carbon, 10KΩ, ±10%, 1/4W R322 RT102214 Carbon, 10KΩ, ±10%, 1/4W R322 RT102214 Carbon, 10KΩ, ±10%, 1/4W R324 RT102214 Carbon, 22KΩ, ±10%, 1/4W R324 RT102214 Carbon, 10KΩ, ±10%, 1/4W R324 RT102214 Carbon, 10KΩ, ±10%, 1/4W R324 RT1012314 Carbon, 22KΩ, ±10%, 1/4W R328 RT1012314 Carbon, 22KΩ, ±10%, 1/4W R328 RT1015314 Carbon, 15KΩ, ±10%, 1/4W R328 RT1015314 Carbon, 15KΩ, ±10%, 1/4W R328 RT1012414 Carbon, 15KΩ, ±10%, 1/4W R328 RT1012414 Carbon, 15KΩ, ±10%, 1/4W R328 RT105314 <										
R246 RT1033314 Carbon bon 58KΩ, to 210%, 1/4W R249 R249 RT1053314 Carbon, 56KΩ, to 210%, 1/4W R249 R252 RT1010214 Carbon, 12KΩ, to 210%, 1/4W R256 RT1010214 Carbon, 10KΩ, to 210%, 1/4W R256 RT1010114 Carbon, 10KΩ, to 210%, 1/4W R256 RT1010314 Carbon, 10KΩ, to 210%, 1/4W R256 RT1012314 Carbon, 18KΩ, to 210%, 1/4W R256 RT1022314 Carbon, 22KΩ, to 210%, 1/4W R257 RT1022314 Carbon, 22KΩ, to 210%, 1/4W R258 RT102314 Carbon, 22KΩ, to 210%, 1/4W R258 RT102314 Carbon, 12KΩ, to 210%, 1/4W R258 RT102314 Carbon, 12KΩ, to 210%, 1/4W R258 RT102314 Carbon, 12KΩ, to 210%, 1/4W R259 RT3022410 Carbon, 12KΩ, to 210%, 1/4W R258 RT102314 Carbon, 12KΩ, to 210%, 1/4W R259 RT302314 Carbon, 15KΩ, to 210%, 1/4W R259 RT30250 RT105314 Carbon, 15KΩ, to 210%, 1/4W R259 RT105314 Carbon, 15KΩ, to 210%, 1/4W R259 RT105314 Carbon, 15KΩ, to 210%, 1/4W R259 RT1056214 Carbon, 15KΩ, to 210%, 1/4W Carbon, 15KΩ, to 210%, 1/4W R259 RT1056214 Carbon,										
R247 RT1068314 R248 R249 R252 Carbon, 156KΩ, ±10%, ±10%, 1/4W RT1010314 H24W Carbon, 100Ω, ±10%, 1/4W Carbon, 100Ω, ±10%, 1/4W R320 R310 R71010414 RT1010314 Carbon, 100ΩΩ, ±10%, 1/4W R321 R71022414 RT1010314 Carbon, 200KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W R326 R7102314 RT1012314 Carbon, 22KΩ, ±10%, 1/4W R326 R7102314 RT102314 Carbon, 22KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W R328 R71022314 RT102314 Carbon, 22KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W R328 R71022314 RT102314 Carbon, 22KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W R329 R7105244 RT1012314 Carbon, 120KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W R329 R7105244 RT1012314 Carbon, 120KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W R329 R7105244 RT1012314 Carbon, 120KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W R330 R7105244 RT1012314 Carbon, 120KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W R330 R7105244 RT1012314 Carbon, 120KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W R7105244 RT1012314 Carbon, 120KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W R7105244 RT1012314 Carbon, 120KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W R7106344 Carbon, 150KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W R7106344 Carbon, 150KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W R7106344 Carbon, 150KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W Carbon, 120KΩ, ±10%, 1/4W R7106344 Carbo										
R248 RT1010314 Carbon, 12KΩ, ±10%, 1/4W R249-R252 RT1010141 Carbon, 10KΩ, ±10%, 1/4W R321 RT1010314 Carbon, 20KΩ, ±10%, 1/4W R322-R323 RT1012314 Carbon, 22KΩ, ±10%, 1/4W R322-R323 RT1033014 Carbon, 22KΩ, ±10%, 1/4W R322-R323 RT1012414 Carbon, 22KΩ, ±10%, 1/4W R324 RT1012414 Carbon, 22KΩ, ±10%, 1/4W R325 RT1023014 Carbon, 27KΩ, ±10%, 1/4W R326 RT102314 Carbon, 27KΩ, ±10%, 1/4W R326 RT1012314 Carbon, 22KΩ, ±10%, 1/4W R326 RT1012314 Carbon, 22KΩ, ±10%, 1/4W R327 RT1013314 Carbon, 15KΩ, ±10%, 1/4W Carbon, 12KΩ, ±10%, 1/4W R328 RT1013314 Carbon, 15KΩ, ±10%, 1/4W Carbon, 12KΩ, ±10%, 1/4W R328 RT1015314 Carbon, 15KΩ, ±10%, 1/4W Carbon, 15KΩ, ±										
R249-R252 RT1010114 Carbon, 10ΩΩ, ±10%, 1/4W R254 RR1010314 R71022114 Carbon, 20ΩΩ, ±10%, 1/4W R322-R323 R7103214 Carbon, 20ΩΩ, ±10%, 1/4W R322-R323 R7103214 Carbon, 20ΩΩ, ±10%, 1/4W R322-R323 R7103214 Carbon, 20ΩΩ, ±10%, 1/4W R322-R323 R7103314 Carbon, 20ΩΩ, ±10%, 1/4W R322-R323 R71015314 Carbon, 12KΩ, ±10%, 1/4W R322-R323 R71015314 Carbon, 12KΩ, ±10%, 1/4W R322-R323 R71015314 Carbon, 12KΩ, ±10%, 1/4W R322-R323 R71015314 Carbon, 15KΩ, ±10%, 1/4W Carbon, 15KΩ, ±10%, 1/4W R332-R324 R71015314 Carbon, 15KΩ, ±10%, 1/4W Carbon, 15KΩ, ±10%, 1/4W R332-R324 R71015314 Carbon, 15KΩ, ±10%, 1/4W Carbon, 15KΩ, ±10%, 1/4W R332-R336 R71015314 Carbon, 15KΩ, ±10%, 1/4W R332-R336 Carbon, 15KΩ, ±10%, 1/4W Carbon, 15KΩ, ±10%, 1/4W R333-R336 R71015314 Carbon, 15KΩ, ±10%, 1/4W R333-R336 R710								·		
R254 RT1010314 Carbon, 10KΩ, ±10%, 1/4W R324 RT1023414 Carbon, 32Ω, ±10%, 1/4W R324 RT1012314 Carbon, 32Ω, ±10%, 1/4W R324 RT1012314 Carbon, 12KΩ, ±10%, 1/4W R325 RT102214 Carbon, 12KΩ, ±10%, 1/4W R326 RT102314 Carbon, 22KΩ, ±10%, 1/4W R326 RT1012314 Carbon, 22KΩ, ±10%, 1/4W R327 RT1012314 Carbon, 12KΩ, ±10%, 1/4W R328 RT1013314 Carbon, 12KΩ, ±10%, 1/4W R328 RT1013314 Carbon, 5.6KΩ, ±10%, 1/4W Carbon, 12KΩ, ±10%, 1/4W R328 RT1013314 Carbon, 5.6KΩ, ±10%, 1/4W Carbon, 12KΩ, ±10%, 1/4W R329 RT1013314 Carbon, 5.6KΩ, ±10%, 1/4W Carbon, 20KΩ, ±10%, 1/4W R329 RT1013314 Carbon, 5.6KΩ, ±10%, 1/4W Carbon, 20KΩ, ±10%, 1/4W <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>										
R255 RT1018314 Carbon, 18KΩ, ±10%, 1/4W 1/4W R325 RT1033014 RT102314 Carbon, 12KΩ, ±10%, 1/4W R325 RT102314 Carbon, 22KΩ, ±10%, 1/4W R326 RT1012414 Carbon, 12KΩ, ±10%, 1/4W R326 RT1013314 Carbon, 12KΩ, ±10%, 1/4W R328 RT1056214 Carbon, 15KΩ, ±10%, 1/4W R328 RT1056314 Carbon, 15KΩ, ±10%, 1/4W R329 RT1068314 Carbon, 15KΩ, ±10%, 1/4W R329 RT1068314 Carbon, 56KΩ, ±10%, 1/4W R329 RT1068314 Carbon, 56KΩ, ±10%, 1/4W R329 RT1068314 Carbon, 56KΩ, ±10%, 1/4W R330 RT1068314 Carbon, 56KΩ, ±10%, 1/4W R331 RT1058314 Carbon, 56KΩ, ±10%, 1/4W R331 RT1058314 Carbon, 56KΩ, ±10%, 1/4W R331 RT1010414 Carbon, 56KΩ, ±10%, 1/4W R331 RT1010414 Carbon, 56KΩ, ±10%, 1/4W R331 RT1058314 Carbon, 56KΩ, ±10%, 1/4W R332 RT0510414 Carbon, 56KΩ, ±10%, 1/4W R332 RT0510414 Carbon, 56KΩ, ±10%, 1/4W										
R256 RT1022314 Carbon, 22 KΩ, ±10%, 1/4W R257 RT1022314 Carbon, 22 KΩ, ±10%, 1/4W R258 RT1022314 Carbon, 22 KΩ, ±10%, 1/4W R259 RT1012314 Carbon, 22 KΩ, ±10%, 1/4W R326 RT1015314 Carbon, 15 KΩ, ±10%, 1/4W R327 RT1056214 Carbon, 56 KΩ, ±10%, 1/4W R329 RT10168214 Carbon, 32 KΩ, ±10%, 1/4W R329 RT1068314 R329 RT1068314 R329 RT1068314 R329 RT1068314 Carbon, 68 KΩ, ±10%, 1/4W R330 RT1068314 R329 RT1068314 R329 RT1068314 R329 RT1068314 R329 RT1068314 R330 RT1068										
R256 R71022314 Carbon, 22KΩ, \pm 10%, 1/4W R257 R7102314 Carbon, 22KΩ, \pm 10%, 1/4W R258 R71022314 Carbon, 12KΩ, \pm 10%, 1/4W R259 R71012314 Carbon, 12KΩ, \pm 10%, 1/4W R259 R71012314 Carbon, 12KΩ, \pm 10%, 1/4W R327 R71056214 Carbon, 56KΩ, \pm 10%, 1/4W R328 R71033314 Carbon, 38KΩ, \pm 10%, 1/4W R329 R7106214 Carbon, 38KΩ, \pm 10%, 1/4W R329 R71068314 Carbon, 38KΩ, \pm 10%, 1/4W C208 DK1710201 Ceramic, 0.01μF, \pm 20% C208 C219 DK1710301 Ceramic, 0.01μF, \pm 20% C219 C212 DK1710301 Ceramic, 0.01μF, \pm 20% C219 C219 DK1710301 Ceramic, 0.01μF, \pm 20% C219 C225 DK1810402 Ceramic, 0.04μF, \pm 20% C219 DD1540001 Ceramic, 0.04μF, \pm 20% C226 DD1540001 Ceramic, 0.00μF, \pm 20% C228 DK1710301 Ceramic, 0.01μF, \pm 20% C228 DK1710301 Ceramic, 0.01μF, \pm 20% C228 DN1710301 Ceramic, 0.01μF, \pm 20% C228 DN1710301 Ceramic, 0.01μF, \pm 20% C228 DN1710301 Ceramic, 0.01μF, \pm 20% C229 DD1540001 Ceramic, 0.01μF, \pm 20% C229 DN1710301 Ceramic, 0.01μF, \pm 20% C230 DK1710301 Ceramic, 0.01μF, \pm 20% C230 DK171	R255	RT1018314	Carbon, $18K\Omega$,	±10%,	1/4W			•		
R257 RT1022314 Carbon, 27KΩ, 2tΩ, ±10%, 1/4W R326 RT1015314 Carbon, 15KΩ, ±10%, 1/4W 210%, 1/4W R327 RT1056214 Carbon, 56KΩ, ±10%, 1/4W 1/4W R328 RT101533314 Carbon, 56KΩ, ±10%, 1/4W 1/4W R328 RT1033314 Carbon, 56KΩ, ±10%, 1/4W 1/4W Carbon, 150KΩ, ±10%, 1/4W Carbon, 150KΩ, ±10%, 1/4W 1/4W Carbon, 150KΩ, ±10%, 1/4W <td></td> <td></td> <td></td> <td></td> <td></td> <td>R325</td> <td>RT1012414</td> <td>Carbon, 120 KΩ,</td> <td>±10%,</td> <td>1/4W</td>						R325	RT1012414	Carbon, 120 K Ω ,	±10%,	1/4W
R258 R71022314 Carbon, $22KΩ$, $\pm 10\%$, $1/4W$ R259 R71012314 Carbon, $12KΩ$, $\pm 10\%$, $1/4W$ R329 R71023314 Carbon, $33KΩ$, $\pm 10\%$, $1/4W$ Carbon, $12KΩ$, $\pm 10\%$, $1/4W$ R329 R71022414 Carbon, $33KΩ$, $\pm 10\%$, $1/4W$ Carbon, $20KΩ$, $\pm 10\%$, $1/4W$ Carbon, $20KΩ$, $\pm 10\%$, $1/4W$ C201-C207 DK1710301 Ceramic, $0.001μF$, $\pm 20\%$ DK1810402 Ceramic, $0.10μF$, $\pm 20\%$ DK1810402 Ceramic, $0.01μF$, $\pm 20\%$ R339-R340 R71051814 Carbon, $15KΩ$, $\pm 10\%$, $1/4W$ C219-C225 DK184032 Ceramic, $0.01μF$, $\pm 20\%$ R338-R340 R71051814 Carbon, $15KΩ$, $\pm 10\%$, $1/4W$ C228 DD1540001 Ceramic, $200pF$, $\pm 10\%$ R331-R342 R70512214 Carbon, $25KΩ$, $\pm 5\%$, $1/4W$ C228 DD1620101 Ceramic, $200pF$, $\pm 10\%$ R341-R342 R70522314 DD1620101 Ceramic, $200pF$, $\pm 10\%$ R341-R342 R70512214 Carbon, $25KΩ$, $\pm 5\%$, $1/4W$ C230 DK1710301 Ceramic, $200pF$, $\pm 10\%$ R351-R352 R70512214 Carbon, $12KΩ$, $\pm 5\%$, $1/4W$ C231 DD1620101 Ceramic, $200pF$, $\pm 10\%$ R351-R352 R70512214 Carbon, $12KΩ$, $\pm 5\%$, $1/4W$ C231 DD1620101 Ceramic, $200pF$, $\pm 10\%$ R351-R352 R70512214 Carbon, $25KΩ$, $\pm 5\%$, $1/4W$ C231 DD1620101 Ceramic, $200pF$, $\pm 10\%$ R351-R352 R70512214 Carbon, $25KΩ$, $\pm 5\%$, $1/4W$ C232 DK1710301 Ceramic, $200pF$, $\pm 10\%$ R351-R352 R70512214 Carbon, $25KΩ$, $\pm 5\%$, $1/4W$ R351-R362 R71032214 DD1620101 Ceramic, $200pF$, $\pm 10\%$ R351-R358 R71056214 Carbon, $25KΩ$, $\pm 5\%$, $1/4W$ C231 DD1620101 Ceramic, $200pF$, $\pm 10\%$ R351-R352 R70512214 Carbon, $25KΩ$, $\pm 5\%$, $1/4W$ C232 DM10105 DM1										
R71012314										
C201-C207 DK1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C219 C212 DK1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C218 DK1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C219 C225 DK1810402 Ceramic, $0.01\mu F$, $\pm 20\%$ C219 DD1540001 Ceramic, $0.01\mu F$, $\pm 20\%$ C228 DK1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C219 DD1540001 Ceramic, $0.01\mu F$, $\pm 20\%$ C229 DD1620101 Ceramic, $0.001\mu F$, $\pm 20\%$ C229 DD1620101 Ceramic, $0.01\mu F$, $\pm 20\%$ C230 DK1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C230 DK1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C228 DK1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C228 DK1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C229 DD1620101 Ceramic, $0.01\mu F$, $\pm 20\%$ C230 DK1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C230 DK1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C230 DK1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ R345-R346 R70568214 Carbon, $1.00K\Omega$, $\pm 5\%$, $1/4W$ C230 DK1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ R345-R346 R70568214 Carbon, $2.00K\Omega$, $2.00\mu F$										
C201-C207 DK1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C213 DK1810402 Ceramic, $0.01\mu F$, $\pm 20\%$ C219 DK1840302 Ceramic, $0.01\mu F$, $\pm 20\%$ C226 DD1540001 Ceramic, $0.01\mu F$, $\pm 20\%$ C227 DD1620101 Ceramic, $0.01\mu F$, $\pm 20\%$ DD1620101 Ceramic, $0.01\mu F$, $\pm 20\%$ DD1620101 Ceramic, $0.01\mu F$, $\pm 20\%$ C228 DN1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C229 DD1620101 Ceramic, $0.01\mu F$, $\pm 20\%$ C230 DK1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C231 DD1620101 Ceramic, $0.01\mu F$, $\pm 20\%$ C232 DD1620101 Ceramic, $0.01\mu F$, $\pm 20\%$ C234 DN1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C235 DK1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C236 DN1710301 Ceramic, $0.01\mu F$, $\pm 20\%$ C237 DD1620101 Ceramic, $0.01\mu F$, $\pm 20\%$ R331-R348 R70512214 Carbon, $0.01\mu F$,	R259	R11012314	Carbon, 12K12,	±10%,	1/4W					
C201-C207 DK1710301 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ DK1710201 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ C209-C212 DK1810402 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ C213 DK1810402 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ C214 C217 DK1710301 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ Ceramic,			CARACITORS							
C208 DK1710201 Ceramic, $0.001\mu\text{F}$, $\pm 20\%$ R332 RT0518414 Carbon, $180\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C209 C212 C218 DK1810402 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ R333 RT1010414 Carbon, $100\text{K}\Omega$, $\pm 10\%$, $1/4\text{W}$ C218 C219 C225 DK1840302 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ R335-R336 RT0515314 Carbon, $100\text{K}\Omega$, $\pm 10\%$, $1/4\text{W}$ C226 D164001 Ceramic, $0.04\mu\text{F}$, $\pm 20\%$ R337-R338 RT0510414 Carbon, $15\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C227 D01620101 Ceramic, 200pF , $\pm 10\%$ R341-R342 R70512214 Carbon, $15\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C228 DK1710301 Ceramic, 200pF , $\pm 10\%$ R341-R342 R70512214 Carbon, $3.3\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C229 D1620101 Ceramic, 200pF , $\pm 10\%$ R347-R348 R70512214 Carbon, $3.3\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C230 DK1710301 Ceramic, 200pF , $\pm 10\%$ R347-R348 R70512214 Carbon, $3.8\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C231 D1620101 Ceramic, 200pF , $\pm 10\%$ R351-R352 R70536214 Carbon, $1.2\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C232 DK1710301 Ceramic, 200pF , $\pm 10\%$ R351-R356	C201 C207	DK1710201		+000/	İ			· · · · · · · · · · · · · · · · · · ·	-	
C209-C212 DK1710301 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ R333 RT1010414 Carbon, $100\text{K}\Omega$, $\pm 10\%$, $1/4\text{W}$ C213 DK1810402 Ceramic, $0.01\mu\text{F}$, $\pm 80\%$, -20% R334 R31012414 Carbon, $120\text{K}\Omega$, $\pm 10\%$, $1/4\text{W}$ C218 DK1810402 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ Ceramic, $0.04\mu\text{F}$, $\pm 20\%$ R335-R336 RT0515314 Carbon, $120\text{K}\Omega$, $\pm 10\%$, $1/4\text{W}$ C219-C225 DK1840302 Ceramic, $0.04\mu\text{F}$, $\pm 20\%$ R337-R338 RT0510414 Carbon, $120\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C227 DD1620101 Ceramic, 200PF , $\pm 10\%$ R337-R338 RT0510414 Carbon, $120\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C228 DK1710301 Ceramic, 200PF , $\pm 10\%$ R343-R344 RN0522314 Carbon, $3.8\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C229 DD1620101 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ R347-R348 RT0512214 Carbon, $1.2\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C230 DK1710301 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ R351-R352 RT0532214 Carbon, $1.2\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C31 DK1620101 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ R355-R358 RT0516214 Carbon, $1.2\text{K}\Omega$, ± 5			• •		i					
C213 DK1810402 Ceramic, $0.1\mu\text{F}$, $\pm 80\%$, -20% R334 RT1012414 Carbon, $120\text{K}\Omega$, $\pm 10\%$, $1/4\text{W}$ C214-C217 DK1710301 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ R335-R336 RT0515314 Carbon, $15\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C229 DK1840302 Ceramic, $0.04\mu\text{F}$, $\pm 20\%$ R337-R338 RT0510414 Carbon, $15\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C228 DK1710301 Ceramic, 200pF , $\pm 10\%$ R341-R342 RT0512214 Carbon, $820\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C229 DD1620101 Ceramic, 200pF , $\pm 10\%$ R348-R344 RN052231 Carbon, $820\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C230 DK1710301 Ceramic, 200pF , $\pm 10\%$ R349-R350 RT0512214 Carbon, $82\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C231 DK1710301 Ceramic, 200pF , $\pm 10\%$ R349-R350 RT0512214 Carbon, $1.2\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C232 DK1710301 Ceramic, 200pF , $\pm 20\%$ R351-R352 RT0512214 Carbon, $1.2\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C232 DK1710301 Ceramic, 200pF , $\pm 20\%$ R355 RT1082314 Carbon, $3.6\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ H201-H206 <td></td>										
C214-C217 C218 DK1710301 DK1810402 Ceramic, $0.1\mu\text{F}$, $\pm 20\%$ Ceramic, $0.1\mu\text{F}$, $\pm 80\%$, -20% R335-R336 RT0515314 Carbon, $15K\Omega$, $\pm 5\%$, $1/4W$ C219-C225 DK1840302 DD1540001 Ceramic, $0.04\mu\text{F}$, $\pm 5\%$ Ceramic, 200PF , $\pm 10\%$ Ceramic, 200PF , $\pm 10\%$ Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ DK1710301 R337-R338 Ceramic, 200PF , $\pm 10\%$ Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ DK1710301 R7051214 Ceramic, 200PF , $\pm 10\%$ Ceramic, 200PF , $\pm 20\%$ Ceramic, 200PF , $\pm 10\%$ Ceramic, 200PF , $\pm 20\%$ Ceramic, 200PF , $\pm 20\%$ Ceramic, 200PF , $\pm 20\%$ R349-R350 R70512214 R349-R350 R70512214 R3561-R352 R70512214 Cerbon, $12K\Omega$, $\pm 5\%$, $1/4W$ Cerbon, $12K\Omega$, $\pm 10\%$, $1/4W$ Cerbon, $22K\Omega$, $\pm 10\%$, $1/4W$ C					-20%					
C218 DK1810402 Ceramic, $0.1\mu\text{F}$, $+80\%$, -20% R337-R338 RT0510414 Carbon, $100\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C226 DD1540001 Ceramic, $0.04\mu\text{F}$, $\pm 20\%$ R339-R340 RN0582414 Carbon, $820\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C227 DD1620101 Ceramic, 200pF , $\pm 10\%$ R341-R342 RT0512214 Carbon, $3.3\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C229 DD1620101 Ceramic, 200pF , $\pm 10\%$ R347-R348 RT0512214 Carbon, $6.8\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C230 DK1710301 Ceramic, 200pF , $\pm 10\%$ R347-R348 RT0512214 Carbon, $6.8\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C231 DD1620101 Ceramic, 200pF , $\pm 10\%$ R351-R352 RT0512214 Carbon, $6.8\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C232 DK1710301 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ R351-R352 RT053214 Carbon, $3.8\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ H201-H206 HT308291C Transistor, 1.81555 R353 RT1082314 Carbon, $3.8\text{K}\Omega$, $\pm 10\%$, $1/4\text{W}$ H201-H206 HD000105 Transistor, 1.81555 R356 RT1010414 Carbon, $3.8\text{K}\Omega$, $\pm 10\%$, $1/4\text{W}$ L201 <					-20%			•		
C219-C225 DK1840302 Ceramic, 0.04μ F, $\pm 20\%$ R337-R338 RT0510414 Carbon, 100 KΩ, $\pm 5\%$, $1/4$ W C226 DD1620101 Ceramic, 200 pF, $\pm 10\%$ R341-R342 RT0512214 Carbon, 820 KΩ, $\pm 5\%$, $1/4$ W C228 DK1710301 Ceramic, 0.01μ F, $\pm 20\%$ R341-R342 RT0512214 Carbon, 3.3 KΩ, $\pm 5\%$, $1/4$ W C229 DD1620101 Ceramic, 200 pF, $\pm 10\%$ R345-R346 RT0568214 Carbon, 100 KΩ, $\pm 5\%$, $1/4$ W C230 DK1710301 Ceramic, 0.01μ F, $\pm 20\%$ R349-R350 RT0512214 Carbon, 100 KΩ, $\pm 5\%$, $1/4$ W C231 DD1620101 Ceramic, 200 pF, $\pm 10\%$ R351-R352 RT0536214 Carbon, 100 KΩ, $\pm 5\%$, $1/4$ W C232 DK1710301 Ceramic, 200 pF, $\pm 10\%$ R353 RT10536214 Carbon, 3.6 KΩ, $\pm 5\%$, $1/4$ W C232 DK1710301 SEMICONDUCTORS R353 RT1022214 Carbon, 3.6 KΩ, $\pm 5\%$, $1/4$ W H201-H206 HT308291C Transistor, 151555 R355 RT1056314 Carbon, 56 KΩ, $\pm 10\%$, $1/4$ W L201 LC1682002 Transistor, 151555 R355 <t< td=""><td></td><td></td><td></td><td></td><td>-20%</td><td>H335-H336</td><td>K10515314</td><td>Carbon, 15K32,</td><td>15%,</td><td>1/400</td></t<>					-20%	H335-H336	K10515314	Carbon, 15K32,	15%,	1/400
C226 DD1540001 Ceramic, 40pF, $\pm 5\%$ $\pm 5\%$ R339-R340 RN0582414 R342-R344 R10512214 Carbon, 820 KΩ, $\pm 5\%$, 1/4W $\pm 5\%$, 1/4W C228 DK1710301 Ceramic, 200pF, $\pm 10\%$ R341-R342 R344 RN0522314 RN0522314 RN0522314 RN0522314 Carbon, 22KΩ, $\pm 5\%$, 1/4W Carbon, 22KΩ, $\pm 5\%$, 1/4W Carbon, 6.8KΩ, $\pm 5\%$, 1/4W Carbon, 1.2KΩ, $\pm 5\%$, 1/4W Carbon, 2.2KΩ, $\pm 10\%$, 1/4W Carbon, 2.2					-20%	D227 D220	DT0510414	C 100KO	+50/	1/4/4/
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$										
C228 DK1710301 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ R343-R344 RN0522314 Carbon, $22\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C229 DD1620101 Ceramic, 200pF , $\pm 10\%$ R347-R348 RT0568214 Carbon, $6.8\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C230 DK1710301 Ceramic, 200pF , $\pm 20\%$ R349-R350 RT0512214 Carbon, $1.2\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C231 DD1620101 Ceramic, 200pF , $\pm 10\%$ R351-R352 RT0536214 Carbon, $3.6\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C232 DK1710301 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ R353 RT1082314 Carbon, $3.6\text{K}\Omega$, $\pm 10\%$,										
C229 DD1620101 Ceramic, 200pF, $\pm 10\%$ Ceramic, 200pF, $\pm 10\%$ Ceramic, 0.01μF, $\pm 20\%$ Ceramic, 200pF, $\pm 10\%$ Ceramic, 0.01μF, $\pm 20\%$ Ceramic, 0.01μF, $\pm 20\%$ R351-R352 RT0536214 Carbon, 1.2KΩ, $\pm 5\%$, 1/4W Carbon, 1.2KΩ, $\pm 5\%$, 1/4W R351-R352 RT0536214 Carbon, 3.6KΩ, $\pm 5\%$, 1/4W Carbon, 1.2KΩ, $\pm 5\%$, 1/4W R351-R352 RT082314 Carbon, 2.2KΩ, $\pm 10\%$, 1/4W R351-R352 RT1082314 Carbon, 82KΩ, $\pm 10\%$, 1/4W R359-R360 RT1010414 Carbon, 100KΩ, $\pm 10\%$, 1/4W R359-R360 RT1010414 Carbon, 100KΩ, $\pm 10\%$, 1/4W R359-R360 RT1010414 Carbon, 470KΩ, $\pm 10\%$, 1/4W R359-R360 RT10122414 Carbon, 2.2KΩ, $\pm 10\%$, 1/4W R359-R360 RT1018214 Carbon, 4.7KΩ, $\pm 10\%$, 1/4W R361-R362 RT108214 Carbon, 1.8KΩ, $\pm 10\%$, 1/4W R366-R367 RT108214 Carbon, 1.8KΩ, $\pm 10\%$, 1/4W R366-R367 RT1056114 Carbon, 2.20KΩ, $\pm 10\%$, 1/4W R366-R367 RT1022414 Carbon, 2.20KΩ, $\pm 10\%$, 1/4W R368-R369 RT1022414 Carbon, 2.20KΩ, $\pm 10\%$, 1/4W R368-R369 RT1022414 Carbon, 2.20KΩ, $\pm 10\%$, 1/4W Carbon, 2.20KΩ, $\pm 10\%$, 1/4W Carbon, 2.20KΩ, $\pm 10\%$, 1/4W R368-R369 RT1022414 Carbon, 2.20KΩ, $\pm 10\%$, 1/4W Ca										
C229 DD1620101 Ceramic, 200pF, ±10% ±10% R347-R348 RT0510214 Carbon, 1KΩ, ±5%, 1/4W ±5%, 1/4W C230 DK1710301 Ceramic, 0.01μF, ±20% R349-R350 RT0512214 Carbon, 1.2KΩ, ±5%, 1/4W ±5%, 1/4W C231 DD1620101 Ceramic, 200pF, ±10% R351-R352 RT0536214 Carbon, 3.6KΩ, ±5%, 1/4W ±5%, 1/4W C232 DK1710301 Ceramic, 0.01μF, ±20% R353 RT1082314 Carbon, 3.6KΩ, ±10%, 1/4W ±10%, 1/4W H201-H206 HT308291C Transistor, 2SC829C R355 RT1056314 Carbon, 56KΩ, ±10%, 1/4W ±10%, 1/4W H207-H214 HD2001105 Transistor, 1S1555 R356 RT1010414 Carbon, 56KΩ, ±10%, 1/4W ±10%, 1/4W H215-H224 HD1000105 Diode, 1N60 R357-R358 RN1047414 Carbon, 470KΩ, ±10%, 1/4W 1/4W L201 LC1682002 Choke Coil R361-R362 RT1018214 Carbon, 470KΩ, ±10%, 1/4W Carbon, 1.8KΩ, ±10%, 1/4W Carbon, 1.8KΩ, ±10%, 1/4W Carbon, 1.6KΩ, ±10%, 1/4W Carbon, 560KΩ, ±10%, 1/4W Trimmer, 5KΩ, B Carbon, 220KΩ, ±10%, 1/4W <td>3223</td> <td>B.(1710001</td> <td>σσιαπιο, σ.στμι ,</td> <td>-2070</td> <td></td> <td></td> <td></td> <td></td> <td>•</td> <td>1</td>	3223	B.(1710001	σσιαπιο, σ.στμι ,	-2070					•	1
C230 DK1710301 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ R349-R350 RT0512214 Carbon, $1.2\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C231 DD1620101 Ceramic, 200pF , $\pm 10\%$ R351-R352 RT0536214 Carbon, $3.6\text{K}\Omega$, $\pm 5\%$, $1/4\text{W}$ C232 DK1710301 SEMICONDUCTORS R353 RT1082314 Carbon, $82\text{K}\Omega$, $\pm 10\%$, $1/4\text{W}$ H201-H206 HT308291C Transistor, 2SC829C R355 RT1056314 Carbon, $56\text{K}\Omega$, $\pm 10\%$, $1/4\text{W}$ H207-H214 HD2001105 Transistor, 1S1555 R356 RT1010414 Carbon, $56\text{K}\Omega$, $\pm 10\%$, $1/4\text{W}$ H215-H224 HD1000105 Diode, 1N60 R357-R358 RN1047414 Carbon, $470\text{K}\Omega$, $\pm 10\%$, $1/4\text{W}$ L201 LC1682002 Choke Coil R361-R362 RT1047214 Carbon, $4.7\text{K}\Omega$, $\pm 10\%$, $1/4\text{W}$ F201-F206 FF1107003 Ceramic Filter SFA 10.7MHz R363 RT1018214 Carbon, $4.7\text{K}\Omega$, $\pm 10\%$, $1/4\text{W}$ P300 YD2818004 P. C. Board P. C. Board R366-R367 RT1022414 Carbon, $4.7\text{C}\Omega$, $\pm 10\%$, $1/4\text{W}$ R366-R367 R368-R369 RT1047114 <td>C229</td> <td>DD1620101</td> <td>Ceramic 200nF</td> <td>±10%</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	C229	DD1620101	Ceramic 200nF	±10%						
$\begin{array}{cccccccccccccccccccccccccccccccccccc$								•		
C232 DK1710301 Ceramic, $0.01\mu\text{F}$, $\pm 20\%$ SEMICONDUCTORS H201-H206 H207-H214 HD2001105 Transistor, 2SC829C H215-H224 HD1000105 Diode, 1N60 HSCELLANEOUS L201 F201-F206 J201-J208 P300 YD2818004 P. C. Board P300 YD2818004 (ZZ2818004) P. C. Board P. C. Board Assembly R350 R353 RT1082314 R354 RT1022214 Carbon, $82 \text{K} \Omega$, $\pm 10\%$, $1/4W$ R353 RT1082314 R354 RT1022214 Carbon, $22 \text{K} \Omega$, $\pm 10\%$, $1/4W$ R355 RT1056314 R356 RT1010414 Carbon, $1/4W$ R356 RT1010414 R357-R358 RN1047414 Carbon, $1/4W$ R359-R360 RN1022414 R363 RT1047214 Carbon, $1/4W$ R364 RT1047214 Carbon, $1/4W$ R365 R366-R367 RT1022414 R365 R366-R367 RT1022414 R365 R366-R367 RT1022414 R365 R368-R369 RT1047114 R368-R369 RT1047114 R368-R369 RT1047114 Carbon, $1/4W$ Carbon, $1/4W$ Carbon, $1/4W$ Carbon, $1/4W$ Carbon, $1/4W$ Carbon, $1/4W$ R368-R369 RT1047114 R368-R369 RT1047114 Carbon, $1/4W$ R368-R369 RT1047114 R368-R369 RT1047114 Carbon, $1/4W$										
H201-H206 H207-H214 H215-H224 HD1000105 H216-H207-H214 H215-H224 H215-H224 H215-H224 H215-H224 H215-H224 H215-H224 H215-H224 H215-H224 H215-H224 H215-H224 H215-H224 H215-H224 H215-H224 H215-H224 H216-H224										
H201-H206 H207-H214 H215-H224HT308291C HD1000105SEMICONDUCTORS Transistor, 2SC829C Transistor, 1S1555 Diode, 1N60R355 R356 RT1010414 R357-R358 RN1047414 R359-R360 RT1010414 R359-R360 RT1010414 R359-R360 RT1010414 R361-R362 RT1018214 RT1018214 R363 RT1018214 RT1056114 R366-R367 RT1022414 RT1056114 RA0502013 RT1022414 R366-R367 RT1022414 RT1022414 RT1022414 R366-R367 RT1022414 RT1022414 RT1022414 R366-R367 RT1022414 RT102414 RT102414 RT102414 RT1022414 RT1022414 RT1022414 Carbon, 470 Ω , ±10%, 1/4W Carbon, 220K Ω , ±10%, 1/4W Carbon, 560K Ω , ±10%, 1/4W R366-R367 RT1022414 RT1047114P300YD2818004 YD2818004) P. C. Board P. C. Board AssemblyP. C. Board AssemblyRT1047114 R368-R369RT1047114 RT1047114Carbon, 470 Ω , ±10%, 1/4W Carbon, 470 Ω , ±10%, 1/4W			, = ,							
H201-H206 H207-H214 H207-H214 H215-H224HT308291C HD1000105Transistor, 2SC829C Transistor, 1S1555 Diode, 1N60R355 R356 R357-R358 RN1047414 R359-R360 RN1022414 R361-R362 RT1010414 R361-R362 RT1010414 R361-R362 RT1018214 RT1018214 R363 RT1018214 RT1056114 R366-R367 RT1022414 RT1056114 R366-R367 RT1022414 RT1022414 R366-R367 RT1022414 RT1022414 R368-R369Carbon, 56 Carbon, 470 Carbon, 470 Carbo			SEMICONDUCTOR	S		1			•	
H207-H214 H215-H224HD2001105 HD1000105Transistor, 1S1555 Diode, 1N60R356 R356-R360 R359-R360 RN1047414 R359-R360 RN1022414 R361-R362 RT1010414 R359-R360 RT1010414 R359-R360 RT1047214 R361-R362 RT1018214 RT1018214 R363 RT1018214 RT1056114 R366-R367 RT1022414 R366-R367 RT1022414 R368-R369RT1010414 R3701047040 RN1022414 R361-R362 RT1018214 R365-R360 RT1022414 R366-R367 RT1022414 RT1047114RT1010414 Carbon, 470KΩ, \pm 10%, 1/4W Carbon, 1.8KΩ, \pm 10%, 1/4W Carbon, 560KΩ, \pm 10%, 1/4W Carbon, 220KΩ, \pm 10%, 1/4W Carbon, 220KΩ, \pm 10%, 1/4W Carbon, 470Ω, \pm 10%, 1/4W	H201-H206	HT308291C				R355	RT1056314	Carbon, $56 K \Omega$.	±10%,	1/4W
H215-H224 HD1000105 Diode, 1N60 R357-R358 RN1047414 Carbon, 470 KΩ, $\pm 10\%$, $1/4$ W R359-R360 RN1022414 R361-R362 RT1047214 Carbon, 4.7 KΩ, $\pm 10\%$, $1/4$ W R361-R362 RT1047214 Carbon, 4.7 KΩ, $\pm 10\%$, $1/4$ W R361-R362 RT1047214 R363 RT1018214 R364 RT1056114 R365 RA0502013 R366-R367 RT1022414 R365 R366-R367 RT1022414 R368-R369 RT1047114 Carbon, 4.7 KΩ, $4.$					1					1/4W
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	H215-H224						1			1/4W
L201	*									1/4W
L201 LC1682002 Choke Coil R363 RT1018214 Carbon, 1.8 KΩ, $\pm 10\%$, $1/4$ W $\pm 10\%$, $1/4$ W F201-F206 FF1107003 Ceramic Filter SFA 10.7MHz R364 RT1056114 Carbon, 560 KΩ, $\pm 10\%$, $1/4$ W P300 YD2818004 P. C. Board R368-R369 RT1047114 Carbon, 220 KΩ, $\pm 10\%$, $1/4$ W R368-R369 RT1047114 Carbon, 470 Ω, $\pm 10\%$, $1/4$ W			MISCELLANEOUS							1/4W
F201-F206 J201-J208 P1000094 Plug P300 P. C. Board P. C. Board Assembly P300 PC R364 R365 R369 R1047114 Carbon, $\frac{1}{2}$ Carbon, $\frac{1}{$	L201	LC1682002								1/4W
J201-J208 YP1000094 Plug R365 RA0502013 Trimmer, 5KΩ, B P300 YD2818004 P. C. Board R366-R367 RT1022414 Carbon, 220KΩ, \pm 10%, 1/4W R368-R369 RT1047114 Carbon, 470Ω, \pm 10%, 1/4W	F201-F206			10.7MHz	z I					1/4W
P300 YD2818004 P. C. Board (ZZ2818004) P. C. Board Assembly R368-R369 RT1022414 Carbon, 22OKΩ, \pm 10%, 1/4W Carbon, 47OΩ, \pm 10%, 1/4W	J201-J208		Plug		1	1				
P300 YD2818004 P. C. Board (ZZ2818004) P. C. Board Assembly R368-R369 RT1047114 Carbon, $470Ω$, $\pm 10\%$, $1/4W$			7					· · · · · · · · · · · · · · · · · · ·		1/4W (
(ZZ2818004) P. C. Board Assembly	P300	YD2818004	·			1		· ·		1/4W
[]		(ZZ2818004)	P. C. Board Assemb	ly						
\square RT1068214 Carbon, 6.8 K Ω , ±10%, 1/4W						R374	RT1068214	Carbon, $6.8 \text{K}\Omega$,	±10%,	1/4W

REF. DESIG.	MARANTZ PART NO.	DESCRIPTION	REF. DESIG.	MARANTZ PART NO.	DESCRIPTION	REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
		CAPACITORS	R516	RT1010114	Carbon, 100Ω, ±10%, 1/4W	R583	RT1015514	Carbon, 1.5M Ω , ±10%, 1/4W
C301	EA1060169	Elect., 10μF, 16V	R517	RT1010114	Carbon, 100Ω , $\pm 10\%$, $1/4$ W	R584	RT1010214	Carbon, $1K\Omega$, $\pm 10\%$, $1/4W$
C302	EA1060169	Elect., 10μF, 16V	R518	RT1039214	Carbon, 3.9K Ω , ±10%, 1/4W	R585	RT1010314	Carbon, $10K\Omega$, $\pm 10\%$, $1/4W$
C303	DF5547203	Mylar, 4700pF, ±5%,	R519	RT1018314	Carbon, $18K\Omega$, $\pm 10\%$, $1/4W$. •
C304	DF1647201	Mylar, 4700pF, ±10%	R520	RT1056414	Carbon, 560K Ω , ±10%, 1/4W			CAPACITORS
C306	EA1060169	Elect., 10μF, 16V	R521	RT1010414	Carbon, 100 K Ω , ± 10 %, $1/4$ W	C551	DD1615001	Ceramic, 15pF, ±10%, SL
C311	EA1060169	Elect., 10μF, 16V	R522	RT1010414	Carbon, 100 K Ω , ± 10 %, $1/4$ W	C552	DF1668301	Mylar, 0.068μ F, $\pm 10\%$
C312	EA2270169	Elect., 220µF, 16V	R523	GT0556412	Carbon, 560K Ω , ±10%, 1/4W		DF1740301	Mylar, 0.04μ F, $\pm 20\%$
C315-C316	DF1522301	Mylar, 0.022μF, ±5%				C554	EA1060169	Elect., 10μF, 16V
C317-C318	DF1722401	Mylar, 0.22μ F, $\pm 20\%$			CAPACITORS	C555	DK1840302	Ceramic, 0.04μ F, +100%, -0 %
C319-C320	EA1060359	Elect., 10μF, 35V	C501-C502	DK1710301	Ceramic, 0.01μ F, $\pm 20\%$, YY	C556	DK1810402	Ceramic, $0.1\mu\text{F}$, +80%, -20%
			C503	EA1060169	Elect., 10μF, 16V	C558	DK1810402	Ceramic, 0.1μF, +80%, -20%
C321-C322	EA1060169	Elect., 10μF 16V	C504	DK1710301	Ceramic, 0.01μ F, $\pm 20\%$, YY	C559	EA4750359	Elect., 4.7μF, 35V
C323	EA1070109	Elect., 100μF, 10V	C505	DK1840302	Ceramic, 0.04μ F, +100, -0%	C560-C561	DK1710301	Ceramic, 0.01µF, ±20%
C324	EM1040251	Elect., 0.1μF, 25V	C506-C507	DD1620101	Ceramic, 200pF, ±10%, SL	C562	DK1840301	0.04μF, +80%, -20%
C331-C332	EA4750359	Elect., 4.7μF, 35V	C508	EA1060169	Elect., 10μF, 16V	11		AA
C333-C334	EV1050251	Elect., 1μF, 25V	C509	EA4750359	Elect., 4.7μF, 35V	C563	DF1710402	Mylar, 0.1μF, ±20% Mylar, 0.1μF, ±20%
C335	EA2270259	Elect., 220µF, 25V	C510	EA1050509	Elect., 1μF, 50V	C564	DF1710402	Mylar, 0.1μF, ±20%
C336	EA3360109	Elect., 33μF, 10V	C511	EA1060169	Elect., 10μF, 16V Ceramic, 0.04μF, +100%, -0%	11		SEMICONDUCTORS
1			C512	DK1840302	Ceramic, 0.04μ F, +100%, -0 %	H551	HT307331C	
		TRANSFORMERS	1	DD1620101	Ceramic, 200pF, ±10%	H552-H553		Transistor, 25C733 G
L301	LS1001007	MPX Coil, 19KHz, Amp.	C513	DD1620101 EA1070169	Elect., 100µF, 16V	H554-H559		
L302	LS1503002	MPX Coil, 19KHz, 38KHz Block	C514 C515-C517	DK1840302	Ceramic, 0.04μ F, +100%, -0 %	H560-H561	HT303720A	
L304	LS1503001	MPX Coil, 19KHz, 67KHz, Trap.	C515-C517	DK 1040302	Ceramic, 0.0-pri, 100%, 0%	H562	HT307331D	
L305	LS3501002	MPX Coil, L. P. Filter			SEMICONDUCTORS	111302	1113073312	114133331, 200700 32
		SEMICONDUCTORS	H501	HC1000105	IC, TA7060 P	11		MISCELLANEOUS
11004 11007	UT0027010	Transistor, 2SC372	H502	HT306441B	Transistor, 2SC644 S	L551	LC2105001	Choke Coil, 1mH
H301-H307	HT3037210	Transistor, 25K30 Y	H504	HD1000105	Diode, 1N60	J551-J565	YP1000094	Plug
H308	HF200301C HT307322A	Transistor, 2SC732 Bn or Gr	111304	1151000100				
H309-H310 H311-H312	HT104942A		1.1		MISCELLANEOUS	P400	YD2827001	P. C. Board
H313-H314	HT3064410		J501-J508	YP1000094	Plug		(Z Z2827001)	P. C. Board Assembly
H315-H320	HD1000105		L501	LI1018801	IFT FM Det.	11		
1131311020	11121000100						·	RESISTORS
		MISCELLANEOUS	P550	YD2820005	P. C. Board	R401	RC1033212	Solid, $3.3K\Omega$, $\pm 10\%$, $1/2W$
J301-J303	YP1000094	Plug		(ZZ2820005)	P. C. Board Assembly	R402	RC1012012	
J305-J307	YP1000094	Plug	11			R403	RC1027112	
J312-J315	YP1000094	Plug			RESISTORS	R404	RC1015312	
1			R551	RT1056214	Carbon, 5.6K Ω , $\pm 10\%$, 1/4		RC1033312	
P500	YD2820004	P. C. Board	R552	RT1010114	Carbon, 100Ω , $\pm 10\%$, $1/4$		RC1012012	
	(ZZ2820004)	P. C. Board Assembly	R553	RT1027314	Carbon, $27K\Omega$, $\pm 10\%$, $1/4$		RC1010112	Solid, 100Ω , $\pm 10\%$, $1/2W$
		·	R554	RT1010414	Carbon, 100 K Ω , ± 10 %, $1/4$	1 1		
		RESISTORS	R555	RT1010214	Carbon, $1K\Omega$, $\pm 10\%$, $1/4$		GT0510512	Carbon, $1M\Omega$, $\pm 5\%$, $1/2W$
R501	RT1015114		R556-R557	RT1033314	Carbon, $33K\Omega$, $\pm 10\%$, $1/4$		CT0520442	Carbon, 300KΩ, ±5%, 1/2W
R502	RT1010214		R558	RT1015414	Carbon, $150K\Omega$, $\pm 10\%$, $1/4$			
R503	RT1010114		R559	RT1033314	Carbon, $33K\Omega$, $\pm 10\%$, $1/4$ Carbon, $3.3K\Omega$, $\pm 10\%$, $1/4$	1 1		
R504	RT1022314		R560	RT1033214		W R416-R417 R418-R419		
R505	RT1022114		R561	RA0103018	Timmer, 10132,	R420-R421		
R506-R507	RT0582114		II pses	RT1018414	Carbon, $180K\Omega$, $\pm 10\%$, $1/4$			
R508-R509			R562	RT1010114	Carbon, 100Ω , $\pm 10\%$, $1/4$			
R510	RT1010114		R563-R564 R579	RT1010414		1 1	RC1010112	
R511	RT1056214		R580	RT1010214	Carbon, $1K\Omega$, $\pm 10\%$, $1/4$		1	1
R512	RT1018314	Carbon, $18K\Omega$, $\pm 10\%$, $1/4W$	R578	RT1010114	Carbon, 100Ω , $\pm 10\%$, $1/4$			CAPACITORS
DE40	DN1010414	Carbon, 180K Ω , ±10%, 1/4W	R581	RT1010214	Carbon, $1K\Omega$, $\pm 10\%$, $1/4$	1 1	DK1810351	
R513	RN1018414		R586	RT1010314		1 1		
R514	RT1022214		R582	RT1010414		11	EA1070259	
R515	RN1010414	1 Carbon, 1001\26, ±10/0, 1/499	11302	1				

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200 (21)	REF. DESIG.	MARANTZ PART NO.	DESCRIPTION	REF. DESIG.	MARANTZ PART NO.	DESCRIPTION
	C406-C407 C408 C409 C410-C413	EA4760509 EA1070259 EA1070359 EV1050251	Elect., 100μF, 25V	J016 J017 J018 F001	YJ0500017 YL0103001 YL0103001 FS1005007	Transistor Socket Terminal Terminal Fuse
A COLUMN TO SERVICE STATE OF THE SERVICE STATE STAT	J401-J416	YP1000099	MISCELLANEOUS	W001 W002-W003 W004	YC0240010 YB0007001 YB0027001	AC Cord Connective Cord Connective Cord
And the second s	H401 H402-H403 H404-H405 H406-H407 H408	HT312132A HT304582A HT104942A HD2000413 HD3002109	Transistor, 2SC458 LG (D) or (C) Transistor, 2SA494 (Y) or (GR) Diode, SIB 01-02 (200PIV, 1A)	W004 W005 W006 R001 R002-R003 R004	YW2827001 YX2827001 RC1008212 RC1068012 RK0254002	
	P600	YD2827002 (ZZ2826002)	P. C. Board P. C. Board Assembly	R005-R006 R007 R008	RK0104003 GS1010105 RC1039012	Variable, $250 \text{K}\Omega$, (B) Carbon, 100Ω , $\pm 10\%$, 5W Solid, 39Ω , $\pm 10\%$, $1/2\text{W}$
The second secon	M601-M604 J601-J605	IN1006301 YP1000094	MISCELLANEOUS Lamp 6,3V, 0.04A Plug	R009 R011 R012 R013	GT0522501 RT1056114 RC1018012 RT1056114	Carbon, 2.2M Ω , \pm 5%, 1W Carbon, 560 Ω , \pm 10%, 1K
The second second second	P700	YD2827003 (ZZ2827003)	P. C. Board P. C. Board Assembly	R014	RT1082414	Carbon, 820K Ω , ±10%, 1/4W
Part of the Part o	S701	SP0605002	MISCELLANEOUS Push Switch	C001 C003 C004	EA3360109 DK1710301 DO0733380	Ceramic, 0.01μF, 50V, YY
The time of the comment	R701	RT1082214	RESISTOR Carbon, 8.2K Ω , \pm 10%, 1/4W			
The state of the s	C701	DF1622301	CAPACITOR Mylar, 0.022μF, ±10%			
	L001 L002 L003 L004 L005	LF1120023 LB3007526 LC1302001 TS1660803 LC1302001	TRANSFORMERS AM Ant. Coil Balun Coil Choke Coil Power Transf. Choke Coil, 3µH			
	H001 M001 M003-M007 S001 S003 J001 J004 J005	HT403154A IM1104204 IN1008007 SS0202017 SP0201010 YT0104011 YL0106004 YJ0800012 YL0105001	MISCELLANEOUS Transistor, 2SD315 (C, D, E, F) Signal DC Mete Lamp 8V 0.06A Slide Switch Power Switch Terminal for Ant. Terminal Fuse Holder 5P Terminal			
The second of th	J009 J010 J011-J014 J015	YL0104001 YJ0800013 YJ0800013 YL0301021	4P Terminal Meter Socket Dial Illumination Socket Ground Terminal		·	

SPECIFICATIONS

FM Sections:

IHFM Usabl IHFM Select Capture Rat Image Reject Signal to Not Signal to Not Total Harmon Total Harmon Frequency I	quency Range 88-108 MHz le Sensitivity 2.3 μ V tivity 60dB tio 1.6dB ction Ratio at 106MHz 70dB oise Ratio (Mono) 70dB onic Distortion (Mono) 60dB onic Distortion (Stereo) 60dB onic Distortion (Stereo) 0.15% onic Distortion (Stereo) 0.3% Response (ref. 75 μ sec. de-emphasis) \pm 1dB, 50 Hz-15KHz ration at 1KHz 42dB
AIN OCCUO	
Usable Sens Selectivity Image Reject Signal to No Frequency F Total Harmo	quency Range 540-1600KHz itivity 20μV 26dB stion Ratio 70dB oise Ratio 46dB Response, -3dB down 50Hz-4KHz onic Distortion 1%
General:	
Power Requ	irements
Power Const Dimensions Weight	umption 25 Watts Panel Width 14-11/64 Panel Height 4-23/32 Depth 11-1/32 Unit alone 15,4 lbs Packed for Shipment 22,4 lbs

^{*}These specifications and exterior designs may be changed for improvement without advance notice.